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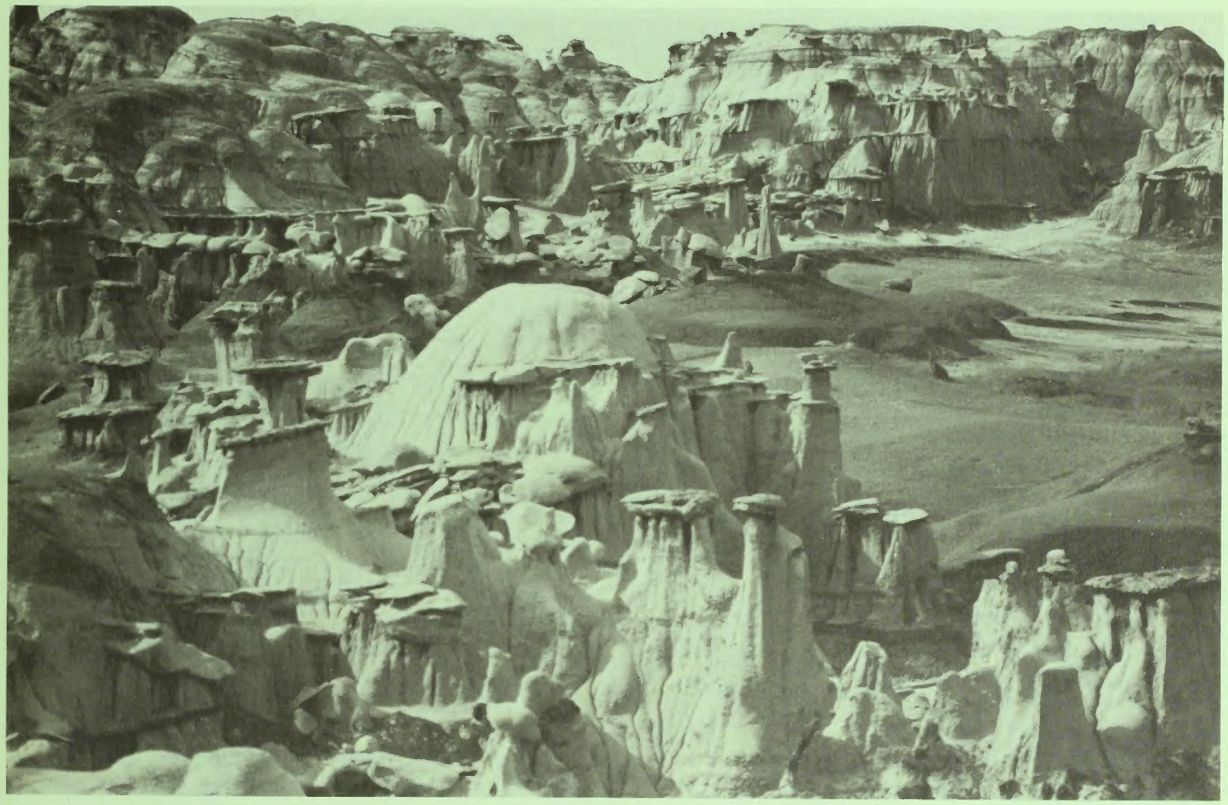
FINAL

WILDERNESS Management Plan

BISTI WILDERNESS
NEW MEXICO



JULY 1986

Bureau of Land Management
Department of the Interior

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WILDERNESS MANAGEMENT PLAN

FOR THE

BISTI WILDERNESS

U.S. DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

ALBUQUERQUE DISTRICT OFFICE

FARMINGTON RESOURCE AREA

SAN JUAN COUNTY, NEW MEXICO

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PART I

INTRODUCTION

Purpose of the Plan

This wilderness management plan serves a threefold purpose. First, it serves to fulfill the BLM Manual 8561 requirement that a management plan be prepared for all BLM administered wilderness areas. Second, it emphasizes the administration of the Bisti Wilderness by establishing clearly written management objectives and policies that function as a road map to guide compatible management actions. And third, it identifies a sequence for implementing prescribed management actions in order to achieve goals and objectives and comply with the intentions of the governing legislation.

This wilderness management plan is area specific and directed toward the administration of resources and uses in the Bisti Wilderness. Resource programs actively operating in the Bisti Wilderness must update their management efforts and adjust those portions of program implementation that are no longer applicable in order to comply with this plan. It is a technical document intended primarily for the Bureau of Land Management, Farmington Resource Area staff, however, it will be available for public review.

The wilderness management emphasis provided in this document is the result of a one-year planning effort involving document preparation, review and public input. This plan is designed to cover a 10-year management period. It will be evaluated and revised as necessary at least every five years or as dictated by significant changes in resource conditions or national direction.

Organization of the Plan

This plan is arranged in a five-part document. Wilderness management information is presented in a logical progression from the general to the specific. Part I introduces the reader to the Bisti Wilderness and the wilderness management plan. Basic management guidance is provided in Part II in the form of wilderness philosophy, broad national goals and specific management objectives. The wilderness management program is presented in Part III and includes descriptions of the objectives, current situation, assumptions, management policies and prescribed management actions for each of the major wilderness elements identified for the Bisti Wilderness. Part IV discusses the management strategy that focuses on a more specific level of wilderness management planning, namely the limits of acceptable change process as applied to the Bisti Wilderness. Part V outlines the schedule for implementing this management plan. The appendices supplement portions of the plan and include an assessment of the environmental impacts of plan implementation and alternatives.

Wilderness Area Overview

Background

The Federal Land Policy and Management Act (FLPMA) of 1976 incorporated the BLM as a full participant in the National Wilderness Preservation System. This law directed the BLM to review all public lands and identify those that met the definition of wilderness established by Congress in the Wilderness Act of 1964. During the inventory phase of the review process, a wilderness inventory unit was identified. This unit was formally designated as the Bisti Wilderness Study Area (WSA) on November 28, 1979. The study phase of the review process determined the Bisti WSA to be suitable for wilderness designation and this determination was recommended in the 1983 Bisti De-na-zin Ah-shi-sle-pah Proposed Wilderness Areas Environmental Impact Statement.

The general area had received high level public, private and news media attention even before it was identified as a WSA. The

entire WSA had been identified for coal leasing in previous planning documents and intense interest had been shown in the development of energy resources. According to a registration book, visitor use peaked in 1982 after the Secretary of the Interior removed WSA status from the Bisti due to a legal interpretation of FLPMA. Public outcry helped to re-establish the area as a WSA. The Bisti WSA was formally designated wilderness as part of the San Juan Basin Wilderness Protection Act of 1984 (refer to Appendix A), signed into law on October 30, 1984. This Act has the distinction of being the first wilderness bill exclusively for BLM lands and the Bisti and De-na-zin Wilderness Areas are the first for BLM in New Mexico. The Act also designated approximately 3,968 acres as wilderness. A cadastral survey has since been completed and the most accurate figure to date for the Bisti Wilderness is 3,946 acres.

Location

The Bisti Wilderness is located in northwestern New Mexico, San Juan County, in an area commonly referred to as the San Juan Basin (refer to Map A). The designated boundaries of the Bisti Wilderness are completely within Townships 23 and 24 North, Range 13 West, New Mexico Principal Meridian. The city of Farmington, New Mexico, with a population of approximately 37,000 is the nearest major population center and lies about 30 air miles to the north.

Access

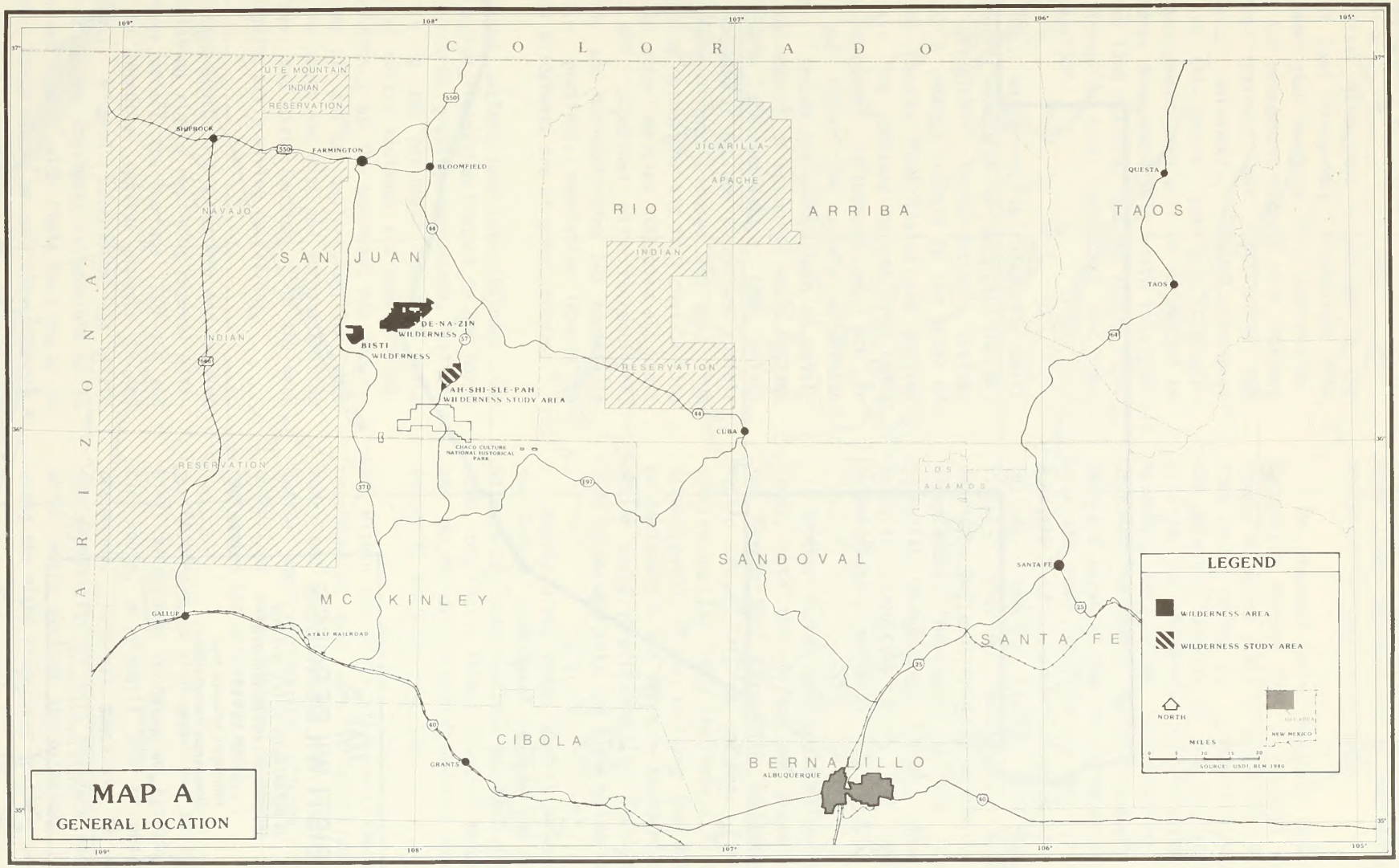
The Bisti Wilderness is most readily accessible from Farmington, New Mexico, by traveling south on State Highway 371 for about 36 miles or from Crownpoint, New Mexico, by traveling north on State Highway 371 for about 46 miles. An unsigned gravel road, known as the old State Highway 371 forks from State Highway 371 just to the north and south of the Bisti Wilderness. This road is aligned from north to south intersecting the Gateway Wash, the most popular entrance point into the area.

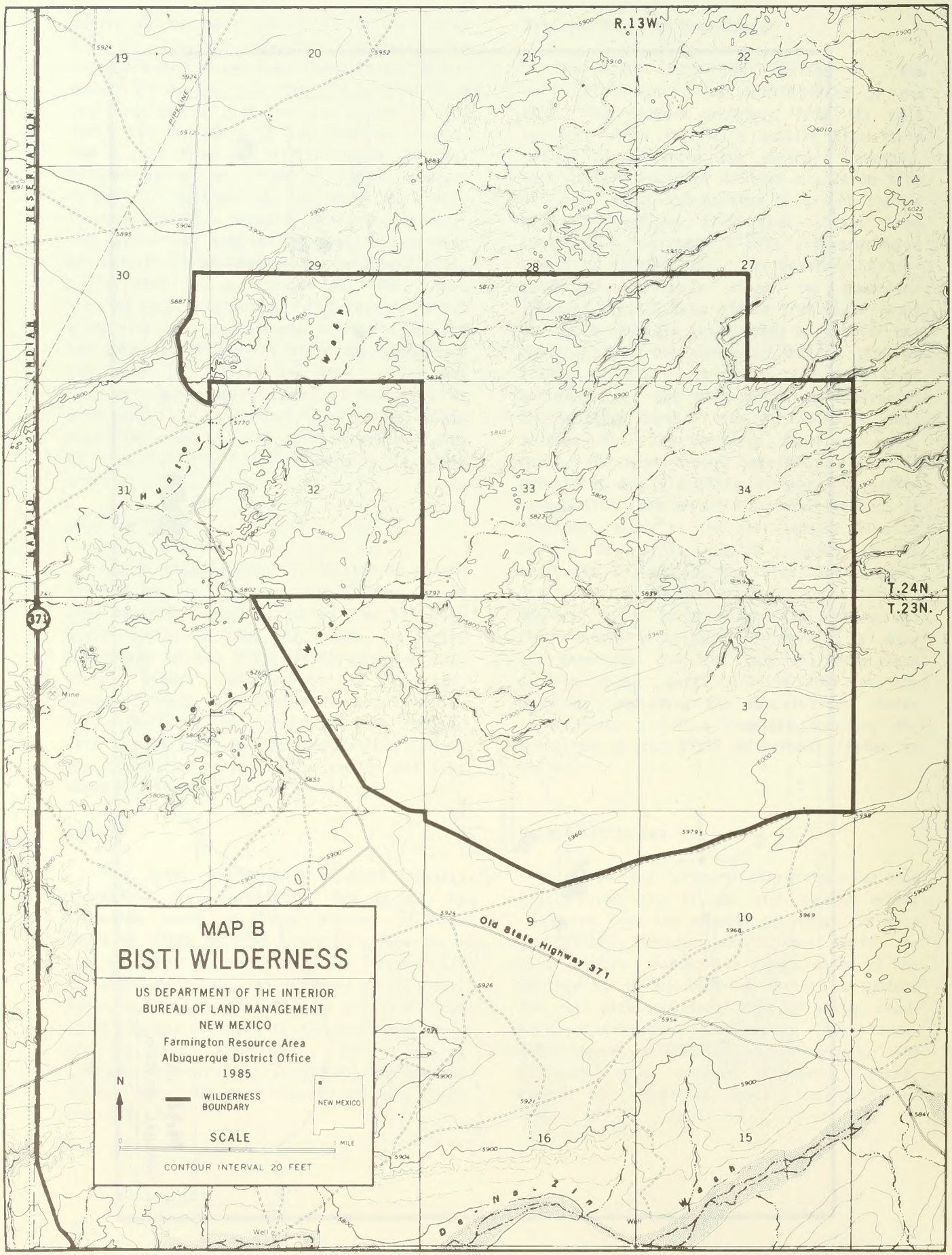
Size and Boundary Description

The Bisti Wilderness consists of 3,946 acres of Federal land administered by the BLM. The eastern boundary from its most northern point follows a section line south until it intersects the southern boundary. The southern boundary follows a section line west for about one-quarter mile and then a road right-of-way (100 feet offset from centerline) for about a mile intersecting a powerline right-of-way. The boundary continues west northwest along the powerline right-of-way (30 feet offset from centerline) for about one mile interrupted by a brief excursion along the northeast section line of T.23N., R.13W., Section 8. Then it jogs northwest for one mile until it intersects the southern section line of T.24N., R.13W., Section 32. The boundary continues east, north, and west around Section 32 until it intersects the old State Highway 371 right-of-way (100 feet offset from centerline). It continues north to the half section line of Section 30, T.24N., R.13W., which is the northwest corner of the Bisti Wilderness. The boundary continues east for about two and one-half miles to the center of Section 27. The boundary turns south for one quarter mile and then east for the same distance along section lines until joining the eastern boundary completing the description. Refer to Appendix B for a complete boundary description of the Bisti Wilderness (refer to Map B).

Unique Attributes

One of the primary attractions of the Bisti Wilderness is the high scenic values resulting from the unusual erosional remnants (toadstools, hoodoos and spires; refer to cover photo). These have been created by the weathering of interbedded shales, sandstone and coal with occasional caps of shale, sandstone or ironstone concretions. These formations occur in uncommon concentrations. The badlands also contain dinosaur, plant, mammal, and reptilian fossils and petrified logs.


C O L O R A D O
UTE MOUNTAIN INDIAN RESERVATION
SHIPROCK
FARMINGTON
BLOOMFIELD
JICARILLA APACHE
QUESTA
NAVAJO
SAN JUAN
RIO ARRIBA
TAOS
INDIAN
TAOS
DE-NA-ZIN WILDERNESS
BISTI WILDERNESS
RESERVATION
AH-SHI-SLE-PAH WILDERNESS STUDY AREA
CUBA
CHACO CULTURE NATIONAL HISTORICAL PARK
LOS ALAMOS
SANDOVAL
SANTA FE
MC KINLEY
GALLUP
A T & S F RAILROAD
SANTA FE
CIBOLA
GRANTS
BERNALILLO
ALBUQUERQUE
LEGEND
WILDERNESS AREA
WILDERNESS STUDY AREA
NORTH
NEW MEXICO
MILES
SOURCE: USDI, BLM 1980
MAP A
GENERAL LOCATION


R.13W.
T.24N.
T.23N.
NAVAJO INDIAN RESERVATION
Old State Highway 371
Mine
Well
Well
MAP B
BISTI WILDERNESS
US DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
NEW MEXICO
Farmington Resource Area
Albuquerque District Office
1985
N
WILDERNESS BOUNDARY
NEW MEXICO
SCALE
1 MILE
CONTOUR INTERVAL 20 FEET

General Management Situation

The Bisti Wilderness is managed by the Bureau of Land Management, Albuquerque District, Farmington Resource Area, New Mexico. Planning and management efforts have received widespread interest and input from BLM specialists, volunteers, special interest groups and the general public. This wilderness management plan will be referenced in the Resource Management Plan which is a comprehensive land use plan for the entire Farmington Resource Area, scheduled for completion in 1988.

The Bisti Wilderness is relatively small (3,946 acres) compared to most in the National Wilderness Preservation System. Therefore, a general concern is the level of cumulative impacts from inside and outside influences. The combined impacts from human and technological influences may act to degrade and impair the area's wilderness character. Inside influences such as developments or removal of resources would degrade the resource characteristics that exist. Outside influences include visual and audible impacts from aircraft, noise and dust from strip mining operations and from coal-hauling trucks and other vehicles utilizing old State Highway 371. Combined with recreational, scientific and non-conforming but acceptable uses (i.e. grazing), cumulative impacts to the Bisti Wilderness are of great concern.

Adjacent surface land uses include: the Navajo Indian Irrigation Project to the north which supports grazing operations; private lands lie to the northeast and east which consist of mostly badlands and some grazing; State Section 2 to the southeast has experienced some oil and gas exploration; BLM lands lie to the south and west and support grazing operations; and State Section 32 to the west is undergoing strip mining operations.

Adjacent subsurface ownership and related valid existing rights regarding mineral activity might affect the surface land use and result in potential outside impacts to the wilderness. Mineral development of State Section 2 to the southwest is possible as is the current status with State Section 32 to the west. Strip mining of coal leases to the south and northwest is possible. Preference Right Lease Applications to the north could be leased for coal production.

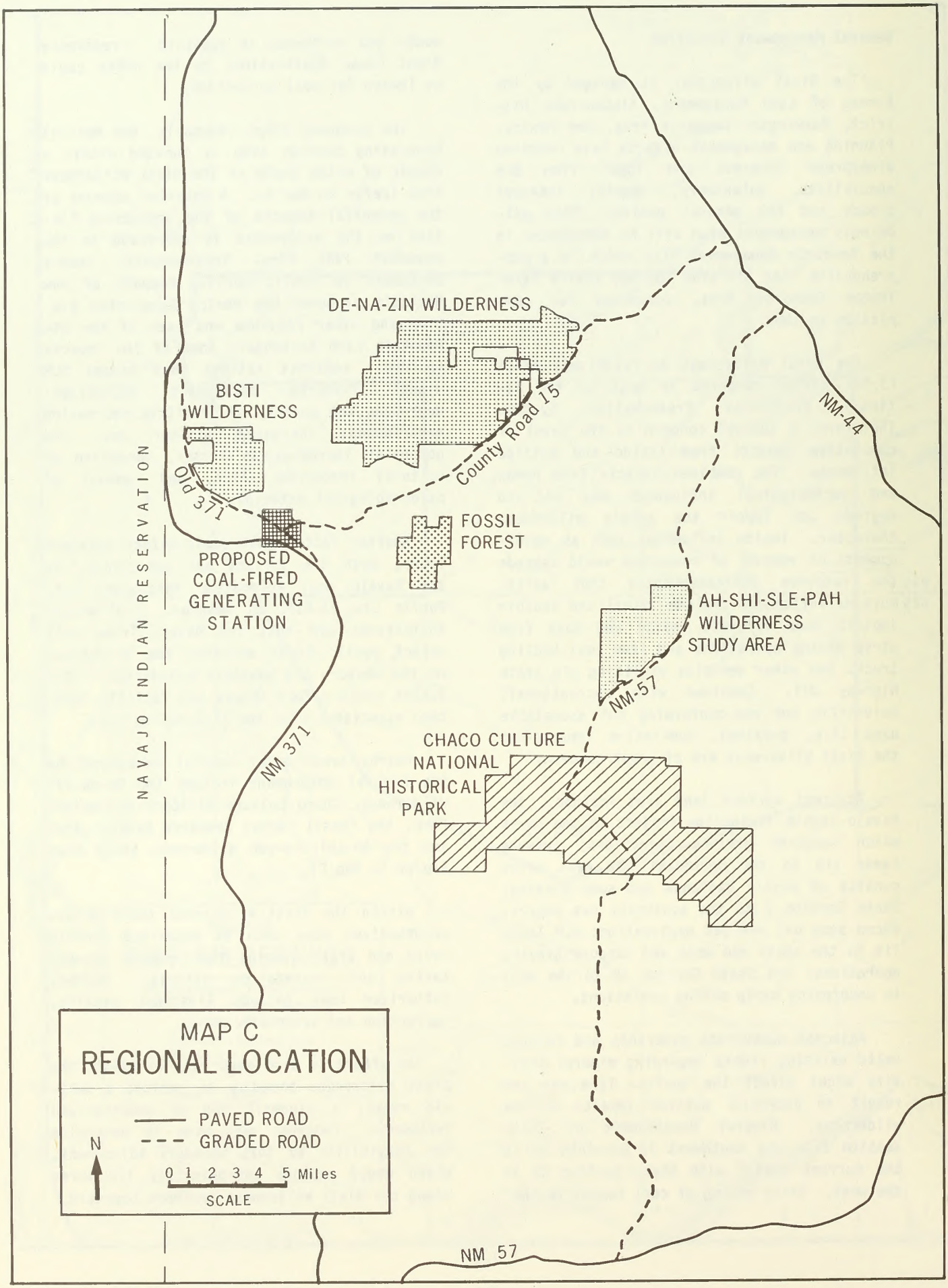
The proposed Dineh (formerly, New Mexico) Generating Station Site is located within a couple of miles south of the Bisti Wilderness Area (refer to Map C). A detailed account of the potential impacts of the Generating Station on the wilderness is addressed in the November 1983 Final Environmental Impact Statement on Public Service Company of New Mexico's proposed New Mexico Generating Station and other possible end uses of the Ute Mountain Land Exchange. Some of the impacts include: contrast ratings that exceed BLM visual resource management objectives, degrading the quality of primitive recreation experiences, increased visitor use, and potential increases in litter, vandalism of cultural resources, fire, and removal of paleontological material.

Another factor that could affect adjacent lands, both the surface and subsurface, is the Navajo Hopi Relocation Settlement Act, Public Law 93-531, as amended. Preliminary indications are that the Navajo Tribe will select public lands abutting the wilderness on the western and southern boundaries. This action could affect access and facility location associated with the Bisti Wilderness.

Nearby areas under special management by the Federal Government include the De-na-zin Wilderness, Chaco Culture National Historical Park, the Fossil Forest Research Natural Area and the Ah-shi-sle-pah Wilderness Study Area (refer to Map C).

Within the Bisti Wilderness there exists unauthorized uses such as motorized vehicle entry and trash dumping that require preventative and reclamation efforts. Current authorized uses include livestock grazing, recreation and scientific study.

An effort is also under way to adjust the Bisti Wilderness boundary to exclude a vehicle route, a windmill and an unauthorized occupancy. Congress may have to determine the feasibility of this boundary adjustment, which would exclude approximately 170 acres along the Bisti Wilderness southern boundary.


DE-NA-ZIN WILDERNESS
BISTI WILDERNESS
Old 371
County Road 15
NM-44
FOSSIL FOREST
PROPOSED COAL-FIRED GENERATING STATION
AH-SHI-SLE-PAH WILDERNESS STUDY AREA
NM-57
NAVAJO INDIAN RESERVATION
NM 371
CHACO CULTURE NATIONAL HISTORICAL PARK
NM 57
MAP C
REGIONAL LOCATION
PAVED ROAD
GRADED ROAD
N
0 1 2 3 4 5 Miles
SCALE

PART II

WILDERNESS MANAGEMENT DIRECTION

Wilderness Management Philosophy

The Bisti Wilderness is designated primarily for permanent long-term protection and preservation of its natural character and, secondly, for public enjoyment as wilderness. It is the position of the BLM, consistent with legislation and national guidance, to establish an overall philosophy or mission for the administration of the Bisti Wilderness in order to supplement national goals and policy.

Overall BLM wilderness management philosophy is to allow the natural ecological cycles, interrelationships, functions, processes and environmental conditions of the wilderness resource to operate freely with as little human and technological influence as possible.

It is recognized that legislatively acceptable uses such as primitive recreation, scientific and educational studies, historical and conservation purposes, livestock grazing and mineral activities are legitimate uses, however, they will not be encouraged or stimulated by promotion or advertisement. Those uses requiring permits may be authorized on a case-by-case basis after analysis in an environmental assessment in order to mitigate impacts to the wilderness resource. The minimum tool concept will be applied and the method selected will be the least degrading and disruptive to the wilderness resource.

The Bisti Wilderness is not an island unto itself and may be affected by indirect human influences that can severely impact ecological energy flow. More direct human-caused impacts such as rangeland developments or removal of mineral resources expedite unnatural changes in the wilderness resource.

It is recognized that some action will be needed to reclaim existing unnatural conditions caused by past human disturbance. This may allow the present wilderness resource to return to a condition that will encourage ecological processes to proceed in a dynamic natural state with human influence having minimal effects.

Wilderness Management Goals

Wilderness management goals have been established to obtain bureauwide consistency in the BLM wilderness management program. The following broadly stated goals apply to all BLM-administered wilderness areas (BLM Manual 8560):

To provide for the long-term protection and preservation of the area's wilderness character under a principle of nondegradation. The area's natural condition, opportunities for solitude, opportunities for primitive and unconfined types of recreation, and any ecological, geological, or other features of scientific, educational, scenic, or historical value present will be managed so that they will remain unimpaired;

To manage the wilderness area for the use and enjoyment of visitors in a manner that will leave the area unimpaired for future use and enjoyment as wilderness. The wilderness resource will be dominant in all management decisions where a choice must be made between preservation of wilderness character and human use;

To manage the area using the minimum tool, equipment, or structure necessary to successfully, safely, and economically accomplish the objective. The chosen tool, equipment, or structure should be the one

that least degrades wilderness values temporarily or permanently. Management will seek to preserve spontaneity of use and as much freedom from regulation as possible; and

To manage nonconforming but accepted uses permitted by the Wilderness Act and subsequent laws in a manner that will prevent unnecessary or undue degradation of the area's wilderness character. Nonconforming uses are the exception rather than the rule; therefore, emphasis is placed on maintaining wilderness character.

Wilderness Management Objectives

Written objectives are presented here to clearly identify the desired conditions that the BLM is striving to achieve in the Bisti Wilderness. The objectives comply with the goals stated in the previous section.

Managerial Elements

The ADMINISTRATION objective is to conduct the necessary administrative activities to the extent consistent with wilderness philosophy, goals, objectives and this management plan in order to preserve, protect and restore the integrity of the wilderness resource.

The FIRE management objectives are to allow fire to return to its natural role and exert its effects on the wilderness resource without endangering public health, safety or values; to use suppression techniques which result in the least possible evidence of human activity; and to develop a fire protection strategy that achieves wilderness management objectives at the least cost.

The INFORMATION AND EDUCATION objective is to provide visitors with an understanding and appreciation of wilderness values and the proper use and care of natural resources in a manner that will leave them unimpaired for future generations.

The SCIENTIFIC STUDY AND DATA COLLECTION objective is to allow research to occur as long as it is conducted in such a manner to protect and preserve the wilderness character in its natural condition subject to natural ecological processes while complying with applicable BLM policy and regulations.

Environmental Elements

The CULTURAL RESOURCES objective is to protect and preserve cultural resources in their natural condition subject to natural ecological processes provided these processes do not adversely threaten significant resources that must be managed in compliance with applicable Federal and State laws and BLM policy.

The LIVESTOCK OPERATIONS objective is to allow grazing use to continue subject to wilderness regulations and to maintain or upgrade the existing vegetative condition and trend.

The MINERAL RESOURCES management objective is to prevent unnecessary and undue degradation of the area's wilderness character when mineral lessees exercise their valid existing rights and to allow no new mineral development after valid existing rights expire.

The NATURALNESS objective is to reclaim the effects of authorized and unauthorized uses that have occurred within the last 50 years, and maintain the area free from new structures and improvements (except for those necessary to protect the wilderness resource, public health and safety, and to recognize valid existing rights).

The PALEONTOLOGICAL RESOURCE objective is to protect and preserve paleontological resources in their natural condition subject to natural ecological processes provided these processes do not adversely threaten significant resources which must be managed in compliance with applicable Federal and State laws and BLM policy.

The RECREATION AND SCENIC QUALITY objectives are to allow historical patterns of primitive recreation to continue in their traditional fashion unless they degrade wilderness values and to provide for public recreation dependent upon a wilderness setting in a manner consistent with the preservation of an enduring resource of wilderness,

characterized by naturalness, and outstanding opportunities for solitude and natural visual enjoyment of the Bisti Wilderness.

The WILDLIFE management objectives are to preserve and protect habitats for wildlife (particularly nesting raptors) in their natural condition while providing minimal restriction to visitor use and access and to allow natural ecological succession of wildlife populations so long as they do not threaten resource and human values outside the Bisti Wilderness.

PART III

WILDERNESS MANAGEMENT PROGRAM

The major wilderness elements identified in this part represent the significant uses, resources and management concerns of the Bisti Wilderness. The elements are arranged under managerial and environmental headings. Each element repeats the applicable management objective and describes the current situation, assumptions, management policies and prescribed actions. The current situation section describes the existing resource condition including problems, trends and uses. The assumption section explains the specialists' future expectations based on the current situation. Management policies seek to provide guidance and administrative direction for the prescribed management actions. The policies do not attempt to encompass or address all possible future management actions. If an unforeseen situation occurs, the management plan may need to be revised and the BLM Manual 8560 will guide the direction for the proposed management action. Revisions to the plan will be subject to public review and State Director approval. Wilderness Management Policy (1981) and regulations are not always restated here as specific policy, however, they still apply. For the most part, only new and redefined policies to fit a particular situation are addressed. The management actions prescribed are the action steps to be taken once the plan is approved. They are the implementation steps. Management actions can be tracked back through the process by looking back to the current situation which has called for some action.

MANAGERIAL ELEMENTS

ADMINISTRATION

Management Objectives

The ADMINISTRATION objective is to conduct the necessary administrative activities to the extent consistent with wilderness philosophy, goals, objectives and this management plan in order to preserve, protect and restore the integrity of the wilderness resource.

Current Situation

The Bisti Wilderness is directly administered by the BLM Farmington Resource Area under the responsibility of the Area Manager and the technical supervision of the wilderness coordinator. One BLM staff member has acted as wilderness coordinator since wilderness designation and approximately 12 volunteers have monitored the Bisti Wilderness via patrols.

Administrative activities have included scheduled volunteer patrols, tours, a cadastral team survey and random field work by specialists. A cadastral team has surveyed and posted wilderness boundary signs on fence posts at most section corners, along rights-of-way and at access points where they intersect the Bisti Wilderness boundary.

Vehicle radio communication from the Bisti Wilderness boundary to the FRA office is adequate. Radio shadows could make long-range handheld radio communication from within the Bisti Wilderness to the FRA office a problem in the case of search and rescue or other emergencies. To date, no request has been received for search and rescue operations.

The BLM and the Federal Aviation Administration have developed an Interagency Agreement (Instruction Bulletin No. 86-84) regarding the management and use of navigable airspace over designated wilderness. The agreement establishes a 2,000 feet above ground level clearance as the minimum altitude for private and commercial aircraft flying in airspace over wilderness areas. The agreement does not apply to military overflights.

No incidents involving visitor health and safety have been reported. Also no known hazards or dangerous natural or human-caused conditions occur that are not inherent to wilderness and this arid badland/semi-desert environment.

Law-enforcement problems have occurred in stopping trespass violations and halting repeat offenders. This is considered a serious problem due to the lack of enforcement presence and attention to prevent unauthorized activities.

An administrative closure of 1,360 acres within the Bisti Wilderness known as the Bisti Badlands (refer to Map D) was enacted in 1978. This closure prohibited motorized vehicle access and the collection of petrified wood (refer to the Federal Register June 5, 1978). The entire Bisti Wilderness is now closed to motorized vehicles as a result of wilderness designation.

Assumptions

Increased management attention and public awareness of this area have revealed various problems that might dictate the need for more intensive on-site management, including intensive patrol and monitoring. Personal contact by informed personnel and volunteers may be the most effective means of influencing user behavior.

Challenge, natural hazards, personal risk, an element of danger and the lack of modern conveniences are integral parts of the wilderness experience.

Unauthorized activities could continue if vehicle access is not restricted and other preventative measures are not taken.

Management Policies

Administrative use of motorized vehicles, mechanized equipment or facilities will not be permitted by the FRA Manager except upon justification for fire suppression, search and rescue operations and in emergencies that require protecting the wilderness resource.

Visitor risks associated with adverse weather conditions, isolation, physical environmental hazards, lack of rapid communication, conveniences and motorized travel are an integral part of the wilderness and will not be eliminated or minimized.

Violations that impair the wilderness resource or do not comply with BLM policy and this management plan will be aggressively investigated. Appropriate actions will be pursued.

Alternate sources of funding to implement this management plan will be pursued (e.g. gift catalog, donations, volunteer time and services).

Patrol and surveillance operations will be continued to preserve and protect wilderness resources.

Search and rescue operations will be assisted by the BLM with costs assessed to the requesting party.

Acquisition of adjacent lands will be pursued if it will increase the manageability of the Bisti Wilderness.

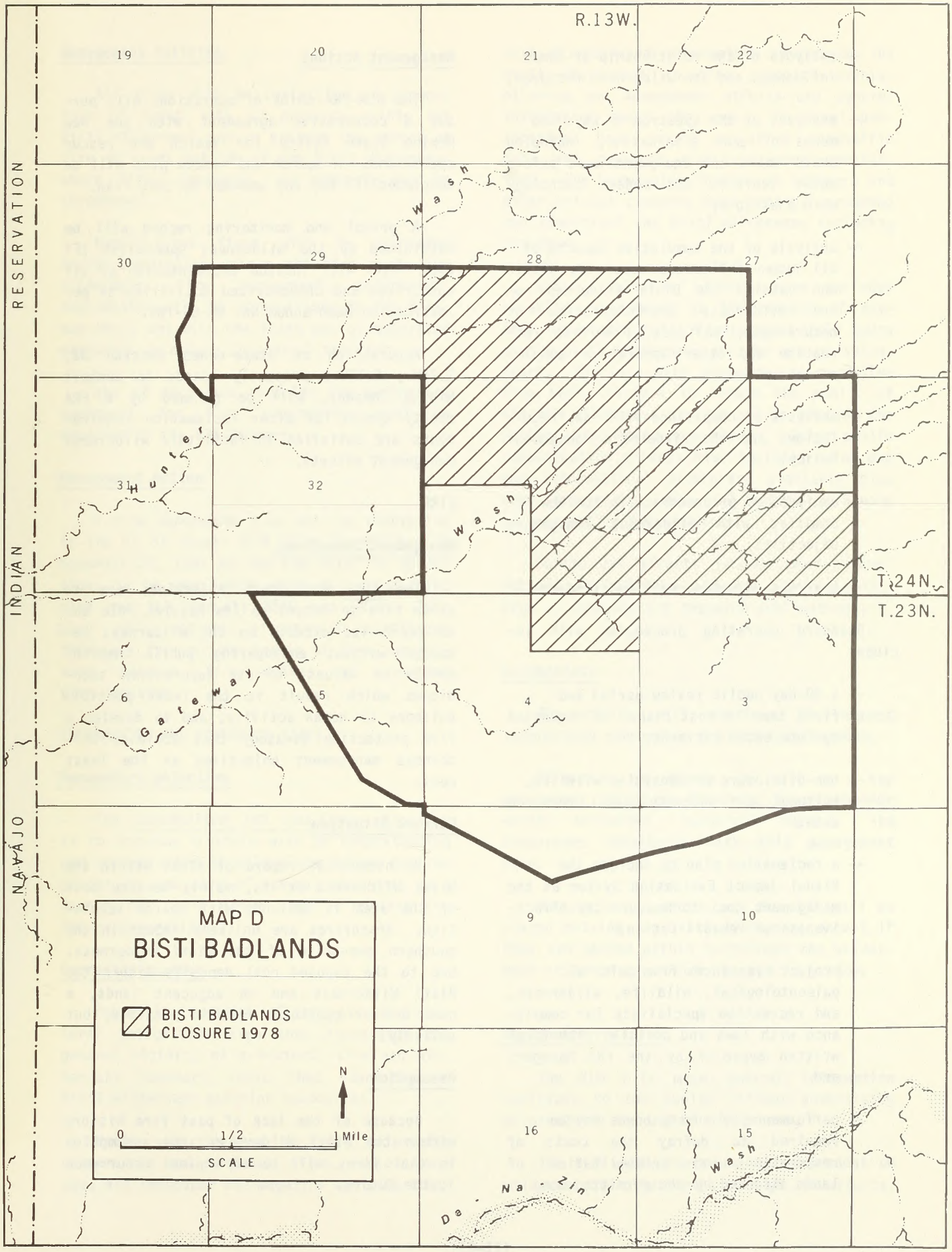
Administrative wilderness boundary signs will be monitored, maintained and replaced according to Albuquerque District Sign Plan.

Any management or proposed action will be addressed in an environmental assessment.

A permit must be carried by permittee while in the Bisti Wilderness for uses requiring authorization.

In addition to National Environmental Policy Act requirements, each environmental assessment will include:

-- analysis of specific effects of the proposed action on natural ecological processes, naturalness, solitude and primitive recreation;


R.13W.
T.24N.
T.23N.
NAVAJO INDIAN RESERVATION
19
20
21
22
30
29
28
27
31
32
33
34
6
5
4
3
9
10
16
15
Hunter Wash
Gateway Wash
Da Na Zin Wash
MAP D
BISTI BADLANDS
BISTI BADLANDS CLOSURE 1978
N
0
1/2
1 Mile
SCALE

-- analysis of the relationship of human influences and the wilderness resource;

-- analysis of the spectrum of ways and means of each alternative, including those tools and equipment used before motor vehicles and modern techology were available;

-- analysis of the cumulative impacts of all human influences occurring within and outside the Bisti Wilderness on the wilderness characteristics of naturalness, solitude, primitive recreation and other special or supplemental values;

-- analysis of compliance with law, regulations and the Wilderness Management Policy;

-- analysis of proposed action and how it complies with wilderness management objectives; and

-- analysis of nondegradation standard.

Standard operating procedures will include:

-- a 30-day public review period and field tour in most cases, if requested by interested citizens;

-- non-disclosure of sensitive wildlife, cultural and paleontological resource data;

-- a reclamation plan to include the Visual Impact Evaluation System as the management tool to measure the effectiveness of rehabilitation;

-- project clearances from cultural, paleontological, wildlife, wilderness, and recreation specialists for compliance with laws and policies with final written approval by the FRA Manager; and

-- performance or surety bonds may be required to defray the costs of restoration and rehabilitation of lands affected by the permitted use.

Management Actions

The BLM-FRA chief of operations will pursue a cooperative agreement with the New Mexico State Police for search and rescue operations. A search and rescue plan will be completed (FY 88) and amended to this Plan.

A patrol and monitoring record will be maintained by the wilderness specialist (FY 86). This will include documentation of all authorized and unauthorized activities as per Instruction Memorandum No. NM-85-185.

Acquisition of State-owned Section 32, T.24N., R.13W., presently leased to Sunbelt Mining Company, will be pursued by a FRA realty specialist after reclamation requirements are satisfied to facilitate wilderness management efforts.

FIRE

Management Objectives

The FIRE management objectives are to allow fire to return to its natural role and to exert its effects on the wilderness resource without endangering public health, safety or values; to use suppression techniques which result in the least possible evidence of human activity; and to develop a fire protection strategy that achieves wilderness management objectives at the least cost.

Current Situation

No historical record of fires within the Bisti Wilderness exists, mainly because most of the area is badlands with sparse vegetation. Brushfires are unlikely except in the southern one-third of the Bisti Wilderness. Due to the exposed coal deposits within the Bisti Wilderness and on adjacent lands, a coal bed or spoilbank fire is possible, but unlikely.

Assumption

Because of the lack of past fire history within the Bisti Wilderness, the assumption is that fires will be of minimal occurrence in the future.

Management Policies

All fires will be controlled to prevent loss of human life or property within the Bisti Wilderness and to prevent the spread of fire to areas outside of the Bisti Wilderness where life, resources, or property may be threatened.

Human-caused fires will be prevented and/or controlled unless the fire meets the wilderness fire management objectives. Suppression will be accomplished by the minimum means and with the least use of motorized equipment necessary to control the fire.

Use of motorized vehicles and mechanized equipment for fire suppression must be approved by the FRA Manager.

Management Action

A fire management plan will be identified in the FY 87 Annual Work Plan and written by November 30, 1987 by the FRA chief of operations to be consistent with this management plan and BLM Manuals 8560 and 9210. This plan will address situational conditions necessary for various levels of fire suppression response, fire regimes and predicted fire behavior.

INFORMATION AND EDUCATION (I&E)

Management Objective

The INFORMATION AND EDUCATION objective is to provide visitors with an understanding and appreciation of wilderness values and the proper use and care of natural resources in a manner that will leave them unimpaired for future generations.

Current Situation

Presently, on-site I&E consists of a cultural antiquities sign that identifies the general vicinity of a historic site and wilderness boundary signs that identify the Bisti Wilderness exterior boundaries.

Media coverage has included television commercials and programs, films, radio coverage, and newspaper and magazine articles that have disseminated information concerning the Bisti Wilderness location, special events, planning and management efforts and general information about the area. Technical publications have sought to share scientific data and research with concerned specialists. The Farmington Chamber of Commerce and other private concerns have actively promoted and advertised the Bisti Wilderness including bus tours.

Public relation efforts have included speaking engagements at the request of several organizations in Farmington, field tours of the Bisti Wilderness and the use of volunteers. Displays with pictures and narrative have been utilized to inform the public of the BLM wilderness program and to educate the public about wilderness values. Other public communication efforts have included color map and informational brochures, available blue line topographic maps and office telephone and personal conversations.

Bureau I&E efforts include memos, newsletters, orientation programs, and circulation of contemporary research publications.

Assumptions

The public will continue to request information concerning the Bisti Wilderness.

Effective and timely I&E will be a key management tool in directing user behavior which minimizes resource impacts and encourages compliance with this management plan.

Materials and techniques for I&E will be placed outside the Bisti Wilderness except if they are needed within to protect the wilderness resource or provide for public safety.

Management Policies

The BLM will make general information available to the public without advertising or promoting the use of wilderness.

The BLM will divert use not dependent on wilderness to other areas through I&E efforts.

Voluntary visitor compliance with policy and this management plan will be sought through I&E as an initial and on-going process. A more direct method of regulating and restricting uses will be applied if all else fails. Regulatory or administrative signing, if needed within the Bisti Wilderness, will be the minimum necessary.

All BLM generated wilderness publications and media presentations will describe the inherent dangers of a wilderness area away from the conveniences of modern technology and any other known dangerous conditions. Visitor assumption of risk and no trace/minimum impact concept statements will also be incorporated.

I&E efforts (i.e. maps, brochures, displays) will be periodically updated to keep them current.

The BLM will educate and inform the general public and users of specific resource needs that require special consideration due to fragile or endangered resources, seasonal, ecological, life cycle and environmental changes.

The BLM will initiate efforts to coordinate with organizations that provide information to the public about the Bisti Wilderness to accomplish wilderness management goals and objectives.

Management Actions

The FRA wilderness specialist, with cartographic and public relation support from the Albuquerque District Office, will update the 1981 Bisti map/brochure to reflect current information and conditions (FY 87). Additional text and other media efforts will include summaries of: wildlife - to divert users away from nesting areas, especially during the nesting season, without calling undue attention or pointing out exact nest locations; cultural resources - to outline prehistoric and historic use and statements of legislation protecting archaeological sites; paleontological resources - to identify the scientific value of fossils, and the laws and penalties to protect them; geological resources - to mention that features such as hoodoos, spires, toadstools, and other formations are fragile because of constant erosional forces, so climbing or otherwise disturbing them will destroy this unique and irreplaceable resource; regulations concerning the restricted area closure and policy on rockhounding; wilderness management regulations as published in the Federal Register February 25, 1985, as amended; and dangers of badlands - piping, quicksand, unstable soils and flash flooding; and wise use of general public lands and natural resources.

The wilderness specialist will conduct an all-employee orientation, and will prepare an orientation pamphlet for new employees, temporary employees and volunteers to familiarize them with wilderness philosophy, goals, objectives, policies, and this management plan (FY 87).

The outdoor recreation planner will develop an I&E display to be located at the proposed parking facility. This display will include information to seek compliance with management objectives and policies of this Plan (FY 88). Specific information will be provided on cultural, paleontological, geological, wildlife and wilderness resources.

An entrance sign will be placed near Gateway Wash to identify the access point to the Bisti Wilderness (FY 86).

SCIENTIFIC STUDY AND DATA COLLECTION

Management Objective

The SCIENTIFIC STUDY AND DATA COLLECTION objective is to allow research to occur as long as it is conducted in such a manner to protect and preserve the wilderness character in its natural condition subject to natural ecological processes while complying with applicable BLM policy and regulations.

Current Situation

The Bisti Wilderness contains opportunities for scientific study and data collection in an outdoor laboratory setting for those projects requiring a dynamic natural environment. There are a number of projects that are currently authorized within the Bisti

Wilderness. The FRA wildlife biologist collects data annually on raptors and their habitat. The FRA outdoor recreation planner collects visitor use data. A University of New Mexico doctoral candidate is utilizing the "Limits of Acceptable Change" system for monitoring and evaluating visual impacts to the natural environment. Range conservationists are presently monitoring vegetative conditions.

Paleontologists have studied plant and animal fossil material. Hydrologic studies have included streamflow, ground water and water quality investigations associated with strippable coal areas.

Of great concern to those undertaking some level of research is the disturbance that has occurred to resources under study. Site vandalism, removal of natural resource material, and other visitor influences have created problems.

Assumptions

Permit applications for scientific study in the Bisti Wilderness may continue to be received.

The demand for basic research in the Bisti Wilderness may increase due to the opportunities provided by a legislatively protected natural area which is otherwise limited in this region.

Management Policies

Scientific study and data collection will not include any collection of materials, excavations, stabilization or interpretive activities except on a case-by-case basis with prior written authorization.

All projects must be conducted without the use of motorized vehicles, mechanized equipment or facilities unless expressly authorized when no other alternative exists. If such use is approved it must be the minimum necessary and must not degrade the wilderness resource.

All requests for scientific study and data collection will be analyzed in an environmental assessment. All proposals for scientific study will:

-- provide information on specific location, maps, timeframes, detailed description of proposed action and a reclamation plan;

-- provide for detailed recordation, reports, care of specimens, and availability of information to the public, specialists, scientists and institutions;

-- address the relative availability of the information or material outside of the wilderness; and

-- address similar information or material available for study in existing collections?

Analysis criteria will be:

-- does it further the management of wilderness and seek to explain the wilderness phenomena through studies of the natural environment, visitor use capacities, social assessments, user impacts, use patterns, use levels and user behavior;

-- does it limit the experience of the wilderness visitor; and

-- does it conflict with wilderness philosophy, goals, objectives and this management plan.

Unauthorized material collection of wilderness resources will be discouraged through information and education efforts, patrol, monitoring, and law enforcement activities.

Permanent or temporary study plots or structures must exist in an inconspicuous manner and not be visually evident to the casual observer.

Provide administrative aid (staff time and funding) when possible and process requests for projects within 90 days of receipt.

Locality information will be kept confidential when possible.

Management Action

The wilderness specialist will contact a Geologic Survey representative to facilitate removal of hydrologic facilities that are no longer needed (FY 87).

ENVIRONMENTAL ELEMENTS

CULTURAL RESOURCES

Management Objective

The CULTURAL RESOURCES objective is to protect and preserve cultural resources in their natural condition subject to natural ecological processes provided these processes do not adversely threaten significant resources that must be managed in compliance with applicable Federal and State laws and BLM policy.

Current Situation

Three different surveys have been completed identifying four cultural sites. A site was recorded around 1960 by the San Juan Archeological Society. Approximately 1,500 acres (37 percent) of the Bisti Wilderness were inventoried in the mid-to-late 1970s and no sites were identified. This inventory is not viewed as contributing reliable data to the cultural resource program. A later survey (Vogler, et al. 1982) covered about 40 acres and identified three sites. Of the four recorded sites, two have been determined eligible to the National Register of Historic Places. These eligible sites are lithic scatters that have not been assigned to a specific period of occupation. The remaining two sites were determined ineligible. One antiquity sign is located in T.24N., R.13W., Section 34 as a general location marker for educational purposes.

Although few cultural sites have been identified within the Bisti Wilderness, numerous sites from the Archaic Period (approximately 6000 B.C. to A.D. 100) have been identified in inventories conducted less than a mile from the Bisti Wilderness boundary. Site density in surrounding areas is about one site for every 20 to 25 acres. Although soils and topography may vary and result in a lower site density, evidence of prehistoric and historic use is still expected within the Bisti Wilderness. Predicted site types include Archaic lithic scatters, sites containing ceramics and chipped stone from later time periods, Navajo structures and features from the Historic Period, and Navajo gravesites and other sacred places such as gathering areas and offering points. Sacred sites may include various features such as rock formations, buttes, mesas, and crevices; other man-made features such as cists, cairns, ceremonial hunting and trapping pits; and sites where curing and other religious ceremonies have been performed. No project-specific work has been done to identify either sacred, religious, spiritual or burial sites. However, a gathering area for a white clay-like mineral used as a ceremonial paint and as an ingredient in food made with wild wolfberries has been identified (Condie 1982). It should be noted that both gravesites and sacred areas are sensitive aspects of Navajo culture, and informants are reluctant to discuss these issues.

Inventory in the Bisti Wilderness has lower priority relative to established FRA cultural resource programs. The resource does not appear to be threatened by any immediate destructive forces any more than other sites in the San Juan Basin. The sites in the Bisti Wilderness are, in fact, more protected than the majority of sites in the San Juan Basin because of restrictions to vehicle access and energy development.

Assumptions

If visitor use increases, this may lead to increased vandalism, surface artifact collection or even illegal excavations. The expected capacity of cultural properties to

withstand impacts as a result of recreational use is moderate due to the fact that predicted site types have low visibility. Despite a general lack of features and structional remains, many of the cultural resource properties may still be vulnerable to natural impacts such as erosion.

Management Policies

Cultural resources in most instances shall be subject to the forces of nature and study or management will not normally include excavation, stabilization, or interpretive activities except on a case-by-case basis with prior written authorization.

Inventory will be permitted as necessary to record and evaluate cultural properties in the Bisti Wilderness.

Specific site locations will not be marked or identified for the public.

Graves will be managed and protected as cultural resource sites.

Gathering of renewable resources such as plants and fruits and nonrenewable colored sands for Native American ceremonial and medicinal purposes will be allowed to continue. Vehicle access, however, will be prohibited.

All information and education media will address the sensitivity issues of cultural resources.

Management Actions

The existing antiquity sign in T.24N., R.13W., Section 33 will be removed by a FRA archaeologist (FY 86).

Vandalism and other user impacts to prehistoric and historic sites will be discouraged by posting antiquities signs along the Bisti Wilderness boundaries and at popular entrance points (FY 87).

Periodic patrol will be performed by the FRA archeologist and volunteer patrollers to inspect conditions of known sites and monitor for pot hunting and other illegal activities (FY 86).

LIVESTOCK OPERATIONS

Management Objective

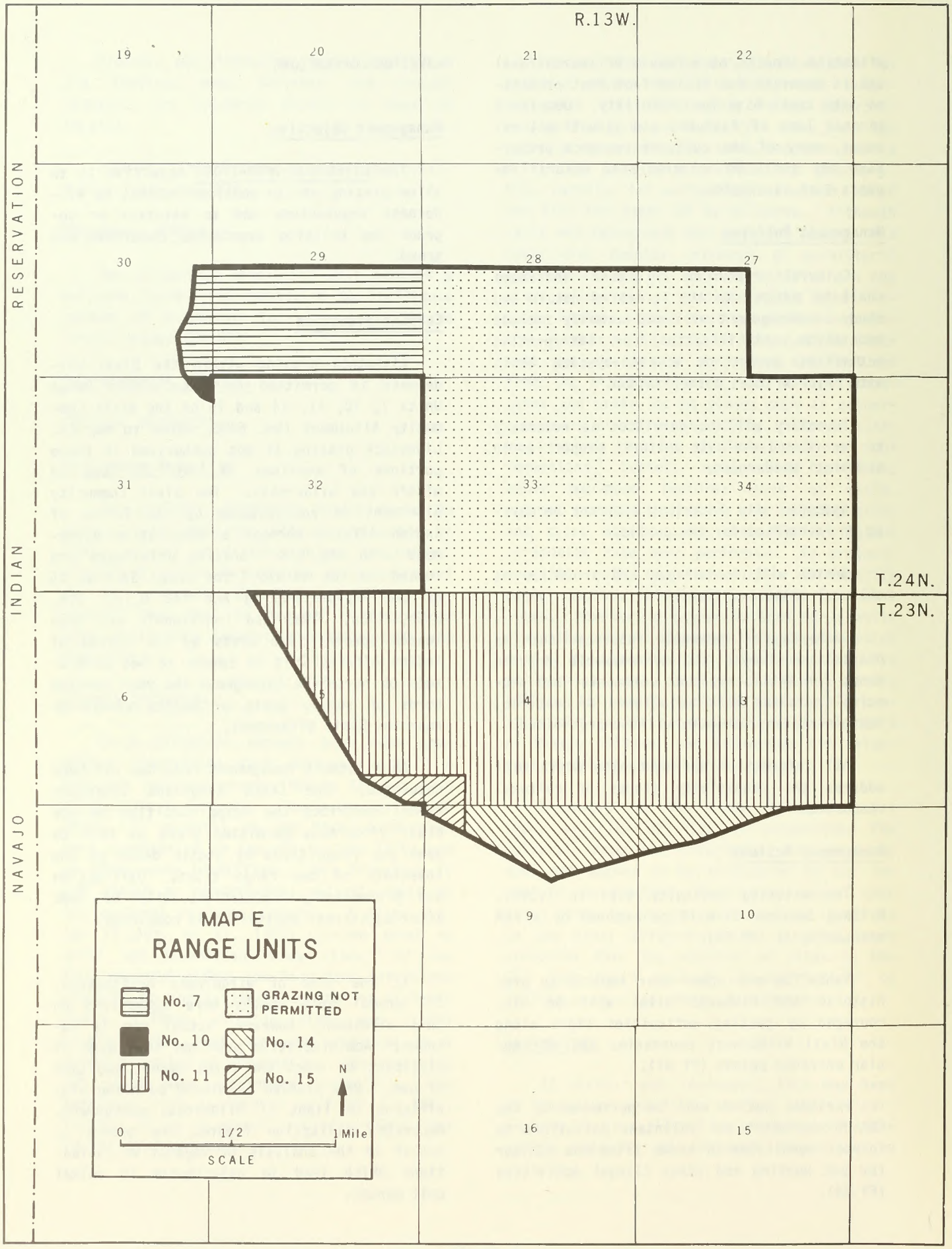
The LIVESTOCK OPERATIONS objective is to allow grazing use to continue subject to wilderness regulations and to maintain or upgrade the existing vegetative condition and trend.

Current Situation

Livestock grazing within the Bisti Wilderness is permitted to occur within Range Units 7, 10, 11, 14 and 15 of the Bisti Community Allotment (No. 6008, refer to Map E). Livestock grazing is not authorized in those portions of sections 27, 28, 33, and 34 within the wilderness. The Bisti Community Allotment is administered by the Bureau of Indian Affairs through a cooperative agreement with the BLM. Grazing privileges are leased to the Navajo Tribe under Section 15 of the Taylor Grazing Act (43 U.S.C. 315, 315h, 135n, 319a) and individuals are then leased specific use areas by the Bureau of Indian Affairs. It is common to see permittees on horseback throughout the year tending herds of sheep, goats or horses within or near the Bisti Wilderness.

An Allotment Management Plan has not been developed. The Chaco Rangeland Inventory (1984) describes the range condition in the Bisti Wilderness permitted areas as fair to good and range trend as static based on the inventory of two range sites. Utilization and productivity evaluations will be made after additional monitoring is completed.

At the time of wilderness designation, 302 animal unit months were authorized on this allotment, however, actual use is unknown. Administrative problems have made it difficult to track the exact amount and type of use. This problem is viewed as being significant in light of wilderness management. Accurate utilization figures are needed to assist in the analysis of vegetative evaluations which lead to adjustments in animal unit months.


R.13W.
19
20
21
22
RESERVATION
30
29
28
27
31
32
33
34
T.24N.
T.23N.
INDIAN
6
5
4
3
NAVAJO
9
10
16
15
MAP E
RANGE UNITS
No. 7
GRAZING NOT PERMITTED
No. 10
No. 14
No. 11
No. 15
N
0
1/2
1 Mile
SCALE

Currently, no proposed range improvements are scheduled to be constructed in the Bisti Wilderness. A windmill (Job Description Report No. 1685) and associated facilities are the only range improvements and are located in T.23N., R.13W., Section 10 NW/4 NE/4 NW/4. The routine types of maintenance include: replacing the leathers every other year, replacing the checks about every five years, and greasing the gear box once a year. A proposed boundary change (described in the Administrative Element section) would eliminate these improvements from the Bisti Wilderness.

Problems resulted because a permittee constructed an unauthorized corral in T.23N., R.13W., Section 3 SE/4 SW/4 SE/4, the corral has since been dismantled and removed.

Assumptions

An Allotment Management Plan is not expected to be developed prior to the completion of the Farmington RMP.

Some maintenance of the windmill may be needed including access by motor vehicle and heavy machinery. No requests for new range improvements are expected.

In order to better assess vegetation condition and trend in the Bisti Wilderness, continued monitoring of existing range sites and inventory of new range sites may be needed.

Consolidation of administrative responsibility for rangeland management may be needed to adequately manage livestock operations in the Bisti Wilderness.

Management Policies

Livestock grazing shall be permitted to continue at its current level subject to regulations necessary to meet the needs of the lessee and the livestock operations objective (pending completion of the Farmington Resource Management Plan).

No curtailment of grazing leases or privileges shall occur simply because of wilderness designation. Any adjustment to the current grazing levels will be examined through rangeland studies and an environmental assessment.

Any use of motorized vehicles or mechanized equipment for range improvements or maintenance will be analyzed through an environmental assessment, with written permission required prior to vehicle or equipment use.

Any change in the overall management situation regarding rangeland operations will be assessed according to the BLM Manual 8560 and the Administrative Cooperative Agreement.

A minimum of one range site per Range Unit will be monitored annually to assess the vegetative condition and trend, determine utilization, gather data on actual use and evaluate the limits of acceptable change according to rangeland management procedures.

New range improvements will be constructed with natural materials when possible, not require motorized vehicle access, and must benefit wilderness values.

Management Actions

The Cooperative Agreement for the "Land Administration of the Eastern Navajo Agency Administrative Area (Off-Navajo Reservation)" by the Navajo Tribe, the BLM, and the Bureau of Indian Affairs will be changed during the annual review (FY 88). The BLM will propose regaining full administrative responsibility for the Bisti Wilderness regarding rangeland management.

A FRA range conservationist will develop a management/users guide for allottees that addresses:

-- expected motor vehicle and mechanical equipment needs;

-- expected emergency conditions (i.e., animal removal);

-- types of servicing and frequency of maintenance needs;

-- range improvement developments;

-- placement of supplemental feed;

-- describe the types and frequency of maintenance and servicing of range improvements in the past;

-- animal damage control; and utilization and vegetative condition and trend.

The guide will address the numerous ways and means to accomplish the above tasks including the way they were done before motor vehicles and modern technology were developed. A cost feasibility analysis will also be included and will be completed during FY 87.

Additional range sites (minimum of one per Range Unit) will be selected and inventoried during FY 86 to assist in monitoring vegetative condition and trend.

The FRA wilderness specialist and a range conservationist will identify the rangeland limits of acceptable change indicators and standards (FY 87) and begin annual monitoring.

Two sheep-proof fencelines with gates will be constructed to manage livestock utilization of the Range Units in the Bisti Wilderness. Approximately one-half mile of fence will be constructed in the upland range portion along the east-west half section line of T.24N., R.13W., Section 29 and the old State Highway 371 right-of-way (FY 88). Approximately three miles of fence will be constructed along the southern exterior boundary between the east and west badland portions of the Bisti Wilderness (FY 89).

MINERAL RESOURCES

Management Objectives

The MINERAL RESOURCES management objective is to prevent unnecessary and undue degradation of the area's wilderness character when mineral lessees exercise their valid existing rights and to allow no new mineral development after valid existing rights expire.

Current Situation

Approximately 1,160 acres of the Bisti Wilderness surface is under oil and gas lease (refer to Map F). No wells have been drilled and there are no known geologic structures. Of the three leases within the Bisti Wilderness, the last will expire on September 30, 1989 if oil or gas is not produced. The existing post-FLPMA leases and their expiration dates are:

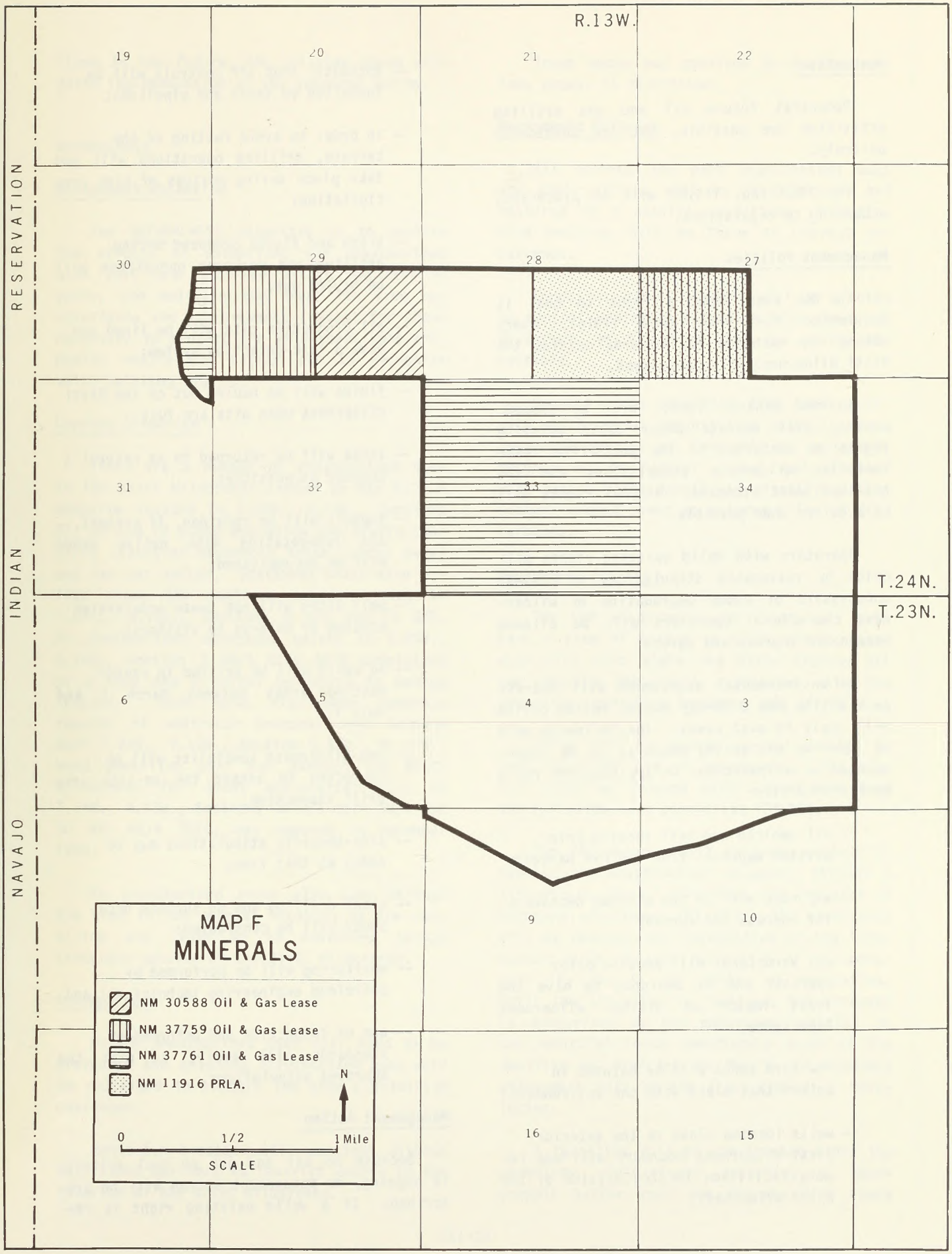
Lease NM-30588, issued August 1, 1977 and expires July 30, 1987

Lease NM-37759, issued October 1, 1979 and expires September 30, 1989

Lease NM-37761, issued October 1, 1979 and expires September 30, 1989

There are no existing coal leases in the Bisti Wilderness since previous leases have been exchanged. Approximately 320 acres of one coal Preference Right Lease Application (PRLA, No. 11916) extends into the Bisti Wilderness (refer to Map F). No decision has been made as to whether the lease will be issued or not according to existing regulations. The House of Representatives Report 98-834 which accompanies House Report 3766, the San Juan Basin Wilderness Protection Act of 1984, discusses the issues of PRLA's, coal leasing, reclamation and coal values. In brief, the Committee believes that mining in wilderness would not be economically viable [would fail to meet the "commercial quantities" test of section 2(b) of the Mineral Leasing Act, as amended] after all costs of compliance with reclamation stipulations that would be required in association with fossil deposits, badland resources, and other wilderness resources even in the absence of wilderness designation.

Existing coal mines occur to the west (Gateway Mine) and to the south (De-na-zin Mine) as well as adjacent coal leases. Significant occurrences of other minerals are not known to exist. All mining claims have been abandoned and invalidated and the Bisti Wilderness has been closed to claim location since October 30, 1984. There are no free use permits or sales of mineral materials existing in the Bisti Wilderness. The Master Title Plats have been updated to reflect the mineral withdrawal.


R.13W.
19
20
21
22
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27
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32
33
34
T.24N.
T.23N.
6
5
4
3
9
10
16
15
RESERVATION
INDIAN
NAVAJO
MAP F
MINERALS
NM 30588 Oil & Gas Lease
NM 37759 Oil & Gas Lease
NM 37761 Oil & Gas Lease
NM 11916 PRLA.
N
0
1/2
1 Mile
SCALE

Assumption

Potential future oil and gas drilling activities are possible, but are considered unlikely.

The PRLA (No. 11916) will be processed, according to regulations.

Management Policies

In the event that a right to coal is determined for PRLA (No. 11916), every attempt to exchange for an area outside the Bisti Wilderness will be pursued.

No new mineral leases will be issued. Lessees will operate under valid existing rights as contained in the post-FLPMA lease including wilderness stipulations and the non-impairment standard. Mineral rights will be acquired when possible.

Operators with valid existing rights will abide by reasonable stipulations to prevent unnecessary or undue degradation of wilderness character. Operators will be allowed reasonable ingress and egress.

An environmental assessment will address each action and a 30-day public review period will apply in most cases. The following will be used as mitigating measures to be incorporated as stipulations in applications for a permit to drill:

-- all vehicle use will receive prior written approval from the FRA Manager;

-- any road will be the minimum necessary for ingress and egress;

-- all structures will receive prior approval and be designed to have the least impact on visitor wilderness experience;

-- low-form tanks will be painted in colors that blend with the environment;

-- wells located close to the exterior Bisti Wilderness boundary will use remote facilities located outside of the Bisti Wilderness;

-- automatic shut off controls will be installed on tanks and pipelines;

-- in order to avoid rutting of the terrain, drilling operations will not take place during periods of high precipitation;

-- trash and fluids produced during drilling and workover operations will be hauled out;

-- all production pits will be lined and have a leak-detection system;

-- fluids will be hauled out of the Bisti Wilderness when pits are full;

-- sites will be returned to as natural a contour as possible;

-- topsoil will be retained, if present, and revegetation with native seeds will be accomplished;

-- well sites will not cause accelerated erosion or hazards to visitors;

-- no wells will be drilled in raptor nesting areas between March 1 and July 1;

-- the wilderness specialist will be contacted to attend the on-site predrill inspection;

-- site-specific stipulations may be added at that time;

-- slant drilling and no surface occupancy will be considered;

-- monitoring will be performed by petroleum engineering technicians; and

-- use of inspection and enforcement standards will apply, as will the approved stipulations.

Management Action

Because no oil and gas or coal activity is ongoing, no management action will be prescribed. If a valid existing right is rea-

lized in the future, the policies above will guide implementation of the proposed action.

NATURALNESS

Management Objective

The NATURALNESS objective is to reclaim the effects of authorized and unauthorized uses that have occurred within the last 50 years, and maintain the area free from new structures and improvements (except for those necessary to protect the wilderness resource, public health and safety and to recognize valid existing rights).

Current Situation

There are a number of unauthorized uses in the Bisti Wilderness (refer to Map G). A dumpsite located in T.24N., R.13W., Sections 27, 28 and 29 along and below the bluffs contains scattered household trash, scrap metal and two car bodies. Scattered trash also exists along the southern boundary road in T.23N., R.13W., Sections 9 N/2 and 10 N/2. An unauthorized occupancy exists in T.23N., R.13W., Section 3 SW/4 SE/4 SE/4 consisting of a home and a corral belonging to George Simpson. There have also been numerous reports of vehicular trespass near Gateway Wash T.23N., R.13W., Section 5 N/2. An overhead powerline that cut through the Bisti Wilderness for about one-quarter mile in T.24N., R.13W., Sections 29 N/2 NW/4 SW/4 and 30 N/2 NE/4 SE/4, was removed in December 1985.

An unauthorized route also cuts through the area in the general vicinity of the powerline and leads to an abandoned Navajo structure outside of the Bisti Wilderness.

Assumptions

Future unauthorized uses will need to be prevented and existing unauthorized uses will be reclaimed to restore the area's primitive character.

Vehicular trespass will continue without sufficient barriers to restrict access to the interior of the Bisti Wilderness.

Trash dumps may continue to be used unless access is restricted.

Management Policies

All current and past unauthorized uses and their effects will be rehabilitated and restored to a natural condition. Preventative measures will be taken to prevent recurrence.

Fences or other barriers will be erected to control vehicular intrusion into the Bisti Wilderness at locations that are easily accessible.

Denuded areas resulting from human activity which cannot rehabilitate naturally in a reasonable period of time will be reclaimed, recontoured to natural slope, and reseeded with native plant species to establish satisfactory ground cover as existed prior to disturbance.

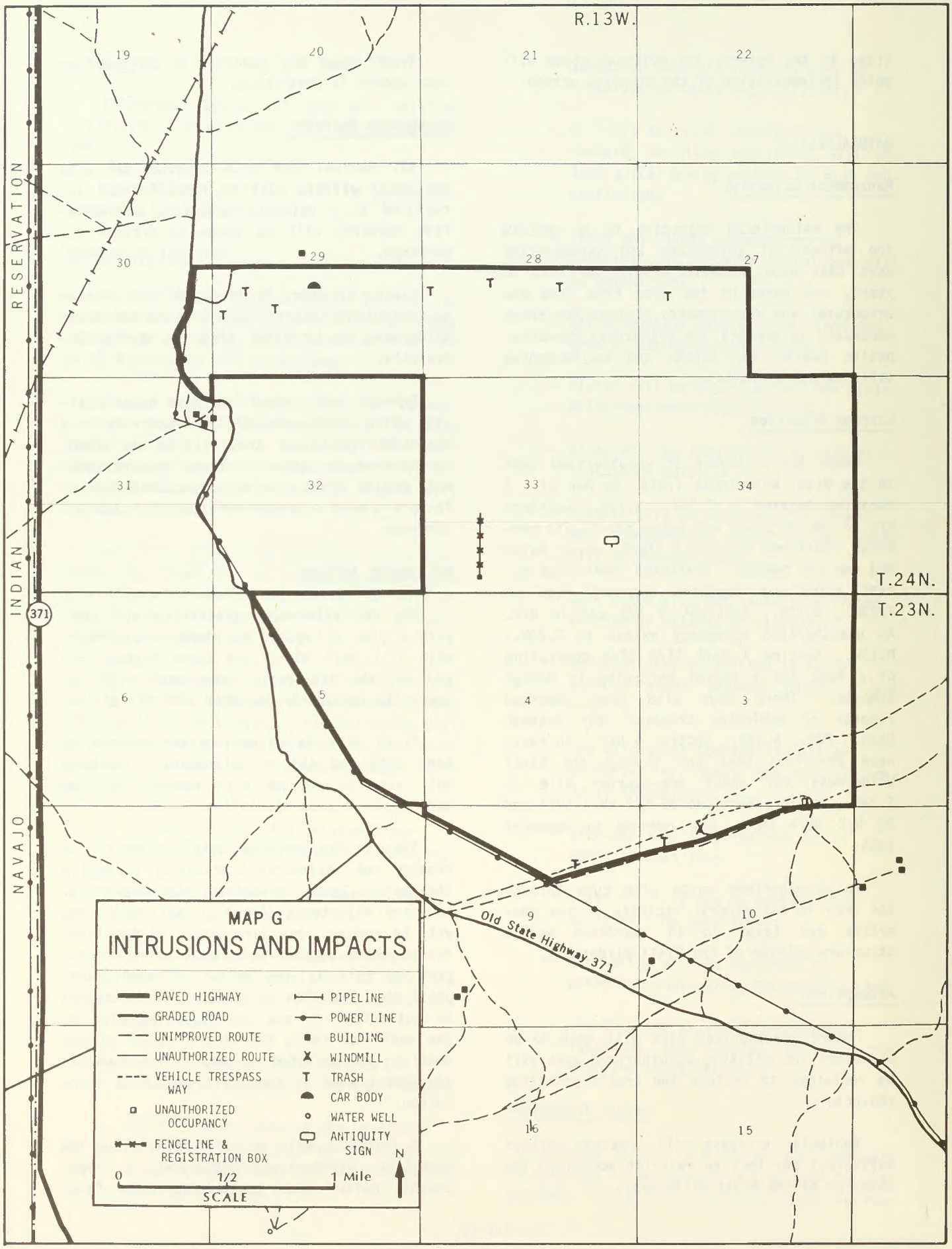
Management Actions

The FRA wilderness specialist will prepare a plan of action to block access route with fill dirt along old State Highway 371 and reclaim the route associated with the powerline removed in December 1985 (FY 87).

Trash will be picked up and removed by hand with the aid of volunteers. The cars will also be removed with supervision from the FRA wilderness specialist (FY 86).

The FRA Manager will initiate actions to resolve the unauthorized occupancy through a life-estate lease, relocating the occupant or boundary adjustment (FY 86). All structures will be removed upon termination of the life-estate lease or upon relocation of the occupant if this is the method of resolution. Until the situation is resolved, the occupant is authorized to use motorized vehicles on the vehicular route immediately south of the dwelling as depicted on Map G. A boundary adjustment will be the first choice of resolution.

A fenceline will be constructed along the powerline right-of-way adjoining a topographic buffer near the Gateway Mine fence


R.13W.
T.24N.
T.23N.
INDIAN RESERVATION
NAVAJO
371
Old State Highway 371
19
20
21
22
30
29
28
27
31
32
33
34
6
5
4
3
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10
16
15
MAP G
INTRUSIONS AND IMPACTS
PAVED HIGHWAY
GRADED ROAD
UNIMPROVED ROUTE
UNAUTHORIZED ROUTE
VEHICLE TRESPASS WAY
UNAUTHORIZED OCCUPANCY
FENCELINE & REGISTRATION BOX
PIPELINE
POWER LINE
BUILDING
WINDMILL
TRASH
CAR BODY
WATER WELL
ANTIQUITY SIGN
N
0
1/2
1 Mile
SCALE

just east of the powerline on the T.24N. and T.23N. line and following the powerline south approximately three-quarters of a mile to another topographic buffer. This project will be completed in the summer (FY 86) under the supervision of the FRA wilderness specialist. A built-in break in the fence will serve as a pedestrian entrance point to the Bisti Wilderness and will be located near the parking facility.

PALEONTOLOGICAL RESOURCES

Management Objective

The PALEONTOLOGICAL RESOURCE objective is to protect and preserve paleontological resources in their natural condition subject to natural ecological processes provided these processes do not adversely threaten significant resources which must be managed in compliance with applicable Federal and State laws and BLM policy.

Current Situation

Past inventories in the Bisti Wilderness have identified hundreds of fossil localities. Perhaps the best known and most important inventory was completed in 1977 by Kues et al. Because of natural erosion much of the site-specific inventory data may no longer be accurate. Geological formations that have been shown to be productive, however, may continue to be important as they do not rely on isolated occurences of a particular specimen or specimens.

Past studies by the Universities of Kansas, Arizona and California at Berkeley have included excavations and collection of a dinosaur skull, turtle, and crocodile material. Other fossil material that has been identified include mammals, pelecypods, gastropods, petrified wood, carbonized plants, and other reptiles.

Of great concern to professionals is the negative impacts to the paleontological resource from natural elements and human influences. Natural erosional forces disturb the structural integrity of fossils destroying potential important scientific data. Human influences such as vandalism and indiscriminate collection of materials also negatively impacts the resource. It is suspected that amateur fossil collecting does occur. Another concern is the restriction to vehicle access and mechanized equipment imposed by the Wilderness Act of 1964. This concern is partially mitigated by the fact that similar geological formations occur outside of designated wilderness where vehicle access is not prohibited. There are no current permits for paleontological study in the Bisti Wilderness.

Assumptions

Amateurs may continue to indiscriminately remove fossil materials.

Most scientific study of paleontological resources will require collection of fossils.

Without stabilization and/or collection, exposed paleontological materials will continue to weather and erode.

Specific administrative guidance for management of paleontological resources in wilderness may be issued in the future.

Management Policies

To the extent not inconsistent with the concept of wilderness preservation and the intent of the Wilderness Act, paleontological resources are available for recreational, scenic, scientific, educational, conservation, and historical uses.

Paleontological resources, in most instances, will be subject to the forces of nature in the same manner as other wilderness resources. Study or management will not normally include any excavation, stabilization, or interpretation activities.

Salvage of paleontological sites, excavation, and collection of artifacts may be permitted on a case-by-case basis where the project will not degrade the overall wilderness character of the area and such activity is needed to preserve the particular resource.

Each permit application will be analyzed through an environmental assessment which will include a 30-day public review period in most cases.

Information and education efforts will discuss the sensitivity issues of paleontological resources.

Unauthorized collection of paleontological resources will be discouraged through public education efforts, citation of violators and patrol and monitoring by BLM specialists and volunteers.

Management policies identified in the Scientific Study and Data Collection section in Part III of this document will be applied to scientific study of paleontological resources.

Inventory will be permitted as necessary to record, evaluate, and document site conditions.

Management Actions

The FRA paleontologist will prepare a Federal Register Notice to close the Bisti Wilderness to collection of paleontological resources, including petrified wood, without a permit (FY 86).

RECREATION AND SCENIC QUALITY

Management Objectives

The RECREATION AND SCENIC QUALITY objectives are to allow historical patterns of primitive recreation to continue in their traditional fashion unless they degrade wilderness values and to provide for public recreation dependent upon a wilderness setting in a manner consistent with the preservation of an enduring resource of wilderness, characterized by naturalness, and outstanding opportunities for solitude and natural visual enjoyment of the Bisti Wilderness.

Current Situation

The historical patterns of primitive recreation have been hiking and concentrated day use occurring along Gateway Wash according to reports by BLM staff and special interest groups. There are no established trails due to constant erosional forces erasing most visible signs of foot travel. Outstanding opportunities for solitude and primitive recreation are available throughout the Bisti Wilderness. Adjacent stripmining impacts, assessed to be temporary, affect those opportunities during some portions of each day and will likely continue for the life of the Gateway Coal Mine (estimated 10 year life). Solitude and visibility are also impacted to some degree along old State Highway 371 where heavy and frequent use occurs from coal-hauling trucks and other vehicles. Other potential impacts to recreation, visual and wilderness qualities within the Bisti Wilderness are documented in the November 1983 Environmental Impact Statement on the proposed New Mexico Generating Station (currently known as the Dineh Generating Station). Since wilderness designation there have been numerous reports of off-road vehicle use in the Bisti Wilderness and there has been one citation issued resulting in a fifty dollar fine.

Recreation potential is derived primarily from the unusual nature of the topography and scenery associated with the concentrations of erosional formations. The major washes and tributaries offer a unique and intriguing visual experience. Vistas of the surrounding landscapes from the higher elevation areas in the northwest portion of the Bisti Wilderness for the most part are unobstructed. Exceptions in the foreground near the boundaries include powerlines and scattered buildings. The types of recreation activities that occur include hiking, sightseeing and photography. The potential for observing fossils and petrified wood while exploring the Bisti Wilderness provides an outstanding opportunity for recreationists.

Approximately one-quarter mile of fence made of wooden posts and wire (constructed in October 1979 as part of the Bisti Badlands closure to keep vehicular traffic from penetrating the area) and a box for visitor registration are located in T.24N., R.13W., Section 33 SW/4. Although accurate visitor use statistics are considered incomplete, no primitive recreation user conflicts or problems are known to exist. According to a visitor registration book, visitor use is concentrated from April through September, although some use occurs year-round. Records show that use has declined from an average of 53 visits per month in 1982 to 22 visits per

month in 1983 to 15 visits per month in 1984. Thirty-five visits per month were recorded in 1985. No recent Special Recreation Permits have been issued.

No demand or inquiries have been documented concerning commercial recreational livestock use (i.e. horses, mules, burros, llamas).

A Recreation Opportunity Spectrum (ROS) Inventory suggests that three types of recreation opportunities are available in the wilderness; roaded natural, semi-primitive motorized and semi-primitive nonmotorized.

The opportunity to experience a roaded natural type of recreation is available along the extreme western and southern boundaries of the wilderness. This zone consists of nearly flat terrain with some badlands which is subject to the sights and sounds of motorized vehicles, nearby coal mining operations and structures such as powerlines, fences, buildings and roads. The frequency of human contact is moderate to high.

The opportunity to experience a semi-primitive motorized type of recreation is available from the west and south towards the interior of the wilderness. This zone is characterized by rolling terrain with intermittent pockets of badlands. It represents a transition zone from the evidence of a human-built environment to one that is dominated by nature. The sights and sounds of human activity on the ground are noticeable to some degree but less than in the roaded natural zone. The frequency of human contact is moderate to low.

The opportunity to experience a semi-primitive non-motorized type of recreation is available in the wilderness in almost one-half of the total area. This zone is characterized by a badlands environment. The many washes and finger-like tributaries between towering erosional formations provide an outstanding opportunity to experience isolation from the evidence of human activity. There are no known structures or facilities in this zone and the frequency of human contact is low.

Assumptions

The opportunity to experience solitude may be diminished by the concentration of visitors at specific boundary locations, in the areas of high scenic value, and in areas of audible and visual outside influences.

Visitor use in 1986 is expected to return to 1983/84 levels. High level media attention and organized trips to the Bisti Wilderness after designation may have caused the increase in use in 1985. The primary season of use may continue to be April through September. The Gateway Wash area is expected to continue to be the primary access point.

The visitor must assume the risks of entering the Bisti Wilderness as a consequence of isolation from the conveniences of a technological world.

Management Policies

Developments for recreation and visitor use will be the minimum amount necessary for protection of the wilderness resource, public health and safety, and will be located outside the Bisti Wilderness. There will be no restrooms, or developments for potable water.

Recreation developments must be analyzed through an environmental assessment and include stipulations that require facility construction and materials which harmonize with the natural surroundings. Site-specific plans will be prepared.

Visual Resource Management Class I objectives and Federal Class II and State air quality standards will be maintained to establish the limits of acceptable change.

Recreational Opportunity Spectrum, semi-primitive non-motorized zone will be the management objective for administering recreation opportunities.

Valid and reliable visitor use and impact data will be gathered to further the planning and management efforts for the Bisti Wilderness, including but not limited to resource impacts, use patterns, visitor beha-

vior, expectations, perceptions, and personal data such as age, occupation and education. This information will be used to establish social indicators for measuring the limits of acceptable change.

The regulations associated with the Bisti Badlands closure to motorized vehicles and collection of petrified wood will remain in effect.

Recreational or hobby gathering of non-fossil nonrenewable mineral specimens will be discouraged, and limited to methods that cause minimal surface disturbance.

Information and education media will include the regulations in effect for the Bisti Wilderness.

Management Actions

A parking facility will be established outside the Bisti Wilderness. A project plan and an environmental assessment will be prepared by the outdoor recreation planner to analyze the level and type of construction. Funding for this project will be requested in the FY 88 Annual Work Plan.

The existing one-quarter mile of fence and the registration box will be removed by the wilderness specialist when construction of the fence along the powerline right-of-way near Gateway Wash is complete (FY 87).

A self-issued registration system will be designed and implemented by the Farmington Resource Area outdoor recreation planner to assist in the collection of visitor use data (FY 88).

A registration box and book will be maintained by the outdoor recreation planner to assist in collecting visitor use data (FY 86).

The Farmington Resource Area outdoor recreation planner will collect available data from existing sources on air quality (FY 87). Limits of acceptable change indicators and standards will be selected and monitored annually.

The FRA wilderness specialist and outdoor recreation planner will establish social indicators of limits of acceptable change and begin monitoring (FY 87).

WILDLIFE

Management Objectives

The WILDLIFE management objectives are to preserve and protect habitats for wildlife (particularly nesting raptors) in their natural condition while providing minimal restriction to visitor use and access and to allow natural ecological succession of wildlife populations so long as they do not threaten resource and human values outside the Bisti Wilderness.

Current Situation

Relatively few wildlife species are found in the Bisti Wilderness. The badlands and the Indian ricegrass - snakeweed dunes habitat sites are the two standard wildlife habitat sites occurring in the Bisti Wilderness. Appendix G contains a list of the common species of wildlife. Annual monitoring of raptor nests has been conducted since 1981 to aid with program compliance. A helicopter was used in 1981 and 1985. Three key raptor nesting territories (two for ferruginous hawks and one for golden eagles) occur in the Bisti Wilderness. Two of the territories have been active for one or more nesting seasons since 1981. One pair of ferruginous hawks has nested three of the last five years, and one pair of golden eagles has nested twice during the same period. It appears that human disturbance by visitors may have caused abandonment in at least one of the three years the birds did not nest.

These species are intolerant of human disturbance early in the nesting season. Suter and Joness (1981) recommend individuals be kept at least 500 meters from active nest sites. There is no estimate of how many or what type of visitors can use the Bisti Wilderness before causing abandonment of the nesting areas. The ferruginous hawk is listed as a category 2 candidate species by the U.S. Fish and Wildlife Service.

An inventory for sclerocactus mesaeverdae was conducted in the Bisti Region (including the Bisti Wilderness) in 1984 and 1985. No Mesa Verde cactus were found and the investigators felt that the area should no longer be considered potential habitat for the species (Ecosphere Environmental Services 1985).

Assumption

If visitor use increases above FY 82 levels, it may result in individuals wandering farther away from the more popular scenic areas, and will increase the chances they will observe and approach nesting raptors. Nest abandonment may occur if nesting raptors are disturbed.

Management Policies

Management will seek to maintain a natural distribution, number, and interaction of indigenous species of wildlife. Natural ecological processes will be allowed to occur in the wilderness resource as far as possible without human influences.

The preservation of sensitive, rare, threatened, and endangered species dependent on wilderness conditions will be favored.

Habitats of sensitive animals (including candidate species) will be managed and/or conserved to minimize the need for listing those animals by either Federal or State governments in the future (BLM Manual 6840).

All studying and monitoring of wildlife and their habitat will be accomplished by nonmotorized/nonmechanical means. Annual monitoring of raptor nesting territories will continue with the only acceptable objective being no nest loss due to human disturbance. Data will be gathered on the relationship of visitor use and nesting raptors, and limits of acceptable change indicators and standards will be established.

Public information and education efforts will be the first course of action before measures are taken to restrict access to buffer zones around active nests. Such efforts will include a concept similar to the Smokey Bear and Woodsy Owl campaigns where information is provided on how nest disturbance can affect raptors which appeals to the sensitive side of visitors rather than restrictive language in the form of regulations that sometimes tends to provide a challenge or disregard for values.

If visitors are not voluntarily avoiding nesting raptors, the next step will be to restrict access to buffer zones around active nests.

All information and education media will address the sensitivity issues of nesting raptors.

Management Actions

Biweekly visits to raptor territories by the FRA wildlife biologist will occur beginning March 1 each year (FY 86). If territories are active, monitoring will be continued through July. Visitors will also be observed to determine if they are approaching active nests.

The FRA wilderness specialist and wildlife biologist will establish wildlife indicators and limits of acceptable change standards and begin annual monitoring (FY 86).

PART IV

WILDERNESS MANAGEMENT STRATEGY

This part represents an activity planning level for management of the Bisti Wilderness. The Limits of Acceptable Change (LAC) System (Stankey, et al. 1985) will be the strategic approach to wilderness management planning. A management planning strategy is incorporated into this document for two specific reasons. First, the BLM Manual 8560 states that the limits of acceptable change will be defined for each wilderness area. And second, the BLM Manual 8561 states that the evaluation of the limits of acceptable change will be required prior to establishing any wilderness use regulations or restrictions including quota or permit systems.

The Limits of Acceptable Change (LAC)

The LAC system is a nine-step process designed to alert managers to unacceptable changes and possible degradation of the wilderness before it's too late to correct the situation, thus, escaping the reactionary syndrome that seeks to direct management. A detailed explanation of this nine-step process is described by Stankey et al. 1985 and is outlined below:

-- Step 1: Identify area concerns and issues.

-- Step 2: Define and describe opportunity classes.

-- Step 3: Select indicators of resource and social conditions.

-- Step 4: Inventory resource and social conditions.

-- Step 5: Specify standards for resource and social conditions.

-- Step 6: Identify alternative opportunity class allocations.

-- Step 7: Identify management actions for each alternative.

-- Step 8: Evaluation and selection of an alternative.

-- Step 9: Implement actions and monitor conditions.

The concept driving the LAC process centers on proactive management for desired quality conditions of the wilderness resource and experience. Recognizing that at least some impact occurs to natural ecological processes and environmental perceptions as a result of human influences, the question focuses on the type and amount of change that is acceptable. This level or limit of acceptable change signals the point of degradation or below par quality conditions. The LAC process allows managers to predict unacceptable changes and apply corrective management actions to prevent degradation before the conditions deteriorate to unacceptable levels.

Application of the nine-step LAC process has been modified to the Bisti Wilderness management situation. Part III of this document, the Wilderness Management Program, has already identified the need to identify limits of acceptable change for range conditions, raptors, air quality and the social environment. Other physical, social, and biological indicators may also be selected to further reflect the integrity of the wilderness resource. However, before the LAC process can be completely implemented, data will need to be collected in order to form a baseline for which to set the limits of acceptable change. These limits, when set, will define the quality of desired conditions in order to perpetuate the stability of the wilderness resource. As an initial step towards LAC process implementation, the Bisti

Wilderness has a system in place and operating for evaluating visual impacts to the natural environment. The system is called the Visual Impact Evaluation System (Tannery, et al. 1985).

The Visual Impact Evaluation System (VIES)

The heart of the VIES is the identification of unnatural visual impacts to the wilderness. Visitor dissatisfaction is one result of unnatural visual impacts in a wilderness environment. Another result is a strong indication of degradation of the biophysical elements of the ecosystem and disruption of natural ecological processes.

To provide readers with an example of how the VIES is applied, the following hypothetical case is presented. The Area Manager is interested in measuring the "limits of acceptable change" (LAC) for the visual impact indicator - Vehicle Routes near Hunter Wash. The wilderness specialist selects a specific site near the wash where vehicle access is possible due to the flat terrain and lack of barriers. The VIES worksheet is then completed.

Visual Impact Indicator	Criteria 0	Criteria 1	Criteria 2	Baseline Rating	Indicator Standard
Vehicle Routes	No Evidence	Some Evidence of Two Track Travel	Mechanically Improved Route	2	0

The baseline rating equals "2" which is compared to the indicator standard which equals "0". This standard exists because vehicles are prohibited in this area. Since the baseline rating exceeds the indicator standard, possible degradation of the wilderness may occur. In this case, the Manager prescribes immediate rehabilitation measures. The vehicle track is reclaimed by utilizing a horse drawn rake to fill in rills and loosen compacted soils in the badlands. A fence is then constructed to prevent vehicle penetration and the affected area is left to the natural elements of wind and rain. Three months pass and the site is rated again. This time a rating of "1" is recorded, meaning that some evidence of the vehicle track remains. Even though the rating still exceeds the indicator standard it is determined that the improved conditions would continue, thus, no further management action is prescribed. Six months pass and the site is rated again. The rating now shows a "0" which complies with the established indicator standard, thus, preventing possible degradation of the wilderness. End of hypothetical case.

It should be noted that VEHICLE ROUTES is just one of twelve visual impact indicators in the VIES. Exceeding the indicator standard of one indicator does not necessarily mean that wilderness conditions have been degraded, but it does signal that there is an unacceptable change in wilderness conditions. This gives the Manager a chance to implement corrective actions before wilderness conditions deteriorate to a point of degradation.

A VIES users guide and full documentation will be available for review at the Farmington Resource Area Office.

PART V

PLAN IMPLEMENTATION SCHEDULE

Budget funding and manpower constraints notwithstanding, the management actions detailed in Part IV will be implemented according to the schedule below.

Implementation Target Date	Responsibility	Management Action refer to text for details - page	Working Document Reference Section
FY 86	Wilderness Specialist	Patrol and Monitoring Record - III-4	1
FY 86	Archeologist	Removal of Antiquity Sign From Interior - III-9	2
FY 86	Range Conservationist	Inventory Additional Range Sites - III-12	3
FY 86	Wilderness Specialist	Remove car bodies and trash - III-15	4
FY 86	Area Manager	Resolve unauthorized occupancy - III-15	5
FY 86	Outdoor Recreation Planner	Maintain registration box and book - III-19	6
FY 86	Archeologist	Periodic patrol and monitoring - III-9	7
FY 86	Wilderness Specialist	Erect Entrance Sign - III-6	8
FY 86	Paleontologist	Federal Register Notice - III-18	9
FY 86	Wilderness Specialist	Construct Fenceline - III-15	10
FY 86	Wildlife Biologist	Monitor raptor territories - III-21	11
FY 87	Archeologist	Posting Antiquity Signs at Boundary Locations - III-8	12
FY 87	Wilderness Specialist	Update 1981 Map/ Brochure - III-6	13

Implementation Target Date	Responsibility	Management Action refer to text for details - page	Working Document Reference Section
FY 87	Wilderness Specialist	All-Employee Orientation - III-6	14
FY 87	Range Conservationist	Establish Range LAC Indicators - III-12	15
FY 87	Wilderness Specialist	Reclaim Route - III-15	16
FY 87	Wilderness Specialist	Removal of Hydrology Facilities - III-8	17
FY 87	Wilderness Specialist	Remove Bisti Badlands Fenceline - III-20	18
FY 87	Wildlife Biologist	Establish Wildlife LAC Indicators and Standards - III-21	19
FY 87	Outdoor Recreation Planner	Establish Social LAC Indicators and Standards - III-20	20
FY 87	Outdoor Recreation Planner	Collect Air Quality Data and Establish LAC Indicators - III-20	21
FY 87	Range Conservationist	Develop Range Management/Users Guide - III-11	22
FY 87	Chief of Operations	Fire Management Plan - III-5	23
FY 88	Chief of Operations	Search and Rescue Plan - III-4	24
FY 88	Outdoor Recreation Planner	Construction of I&E Display - III-6	25
FY 88	Range Conservationist	Construct Fenceline - III-12	26
FY 88	Outdoor Recreation Planner	Construct Parking Facility - III-20	27
FY 88	Area Manager	Revise Cooperative Agreement - III-11	28

Implementation Target Date	Responsibility	Management Action refer to text for details - page	Working Document Reference Section
FY 88	Outdoor Recreation Planner	Design and Implement Self-Issued Registration System - III-20	29
FY 89	Range Conservationist	Construct Fenceline - III-12	30
Unknown	Realty Specialist	Acquisition of State Section 32, T.24N., R.13W. - III-4	31

APPENDIX A

EXCERPTS FROM THE SAN JUAN
WILDERNESS PROTECTION ACT 1984

Title I - San Juan Basin

Sec. 101. This Act may be cited as the "San Juan Basin Wilderness Protection Act of 1984".

Sec. 102.(a) In furtherance of the purposes of the Wilderness Act (16 U.S.C. 1131-1136), the following lands are hereby designated as wilderness, and, therefore, as components of the National Wilderness Preservation System--

(1) certain lands in the Albuquerque District Bureau of Land Management, New Mexico, which comprise approximately three thousand nine hundred and sixty-eight acres, as generally depicted on a map entitled "Bisti Wilderness--Proposed", dated June 1983, and which shall be known as the Bisti Wilderness; and

(2) certain lands in the Albuquerque District of the Bureau of Land Management, New Mexico, which comprise approximately twenty-three thousand eight hundred and seventy-two acres, as generally depicted on a map entitled "De-na-zin Wilderness--Proposed", dated June 1983, and which shall be known as the De-na-zin Wilderness.

(b) Subject to valid existing rights each wilderness area designated by this Act shall be administered by the Secretary of the Interior in accordance with the provisions of the Wilderness Act, except that any reference in such provisions to the effective date of the Wilderness Act (or any similar reference) shall be deemed to be a reference to the effective date of this Act, and any reference to the Secretary of Agriculture shall be deemed to be a reference to the Secretary of the Interior.

(c) As soon as practicable after enactment of this Act, a map and a legal description of each wilderness area designated by this Act shall be filed by the Secretary of the Interior with the Committee on Energy and Natural Resources of the United States Senate and the Committee on Interior and Insular Affairs of the House of Representatives. Each such map and description shall have the same force and effect as if included in this Act, except that correction of clerical and typographical errors in each such legal description and map may be made by the Secretary subsequent to such filings. Each such map and legal description shall be on file and available for public inspection in the Office of the Director of the Bureau of Land Management, Department of the Interior.

(d) Within the wilderness areas designated by this Act, the grazing of livestock, where established prior to the date of enactment of this Act, shall be permitted to continue subject to such reasonable regulations, policies, and practices as the Secretary of the Interior deems necessary, as long as such regulations, policies, and practices fully conform with and implement the intent of Congress regarding grazing in such areas as such intent is expressed in the Wilderness Act and this Act.

Sec. 104.(a) The Secretary of the Interior shall exchange such public lands or interest in such lands, mineral or nonmineral, as are of approximately equal value and selected by the State of New Mexico, acting through its commissioner of public lands, for any State lands or interest therein, mineral or nonmineral, located within the boundaries of any of the tracts designated as wilderness under section 2. For the purpose of this section, the term public lands shall have the same meaning as defined in section 103(c) of the Federal Lands Policy and Management Act of 1976.

(b) Within one hundred and twenty days of enactment of this Act, the Secretary of the Interior shall give notice to the New Mexico Commissioner of Public Lands of the tracts to be designated as wilderness pursuant to section 102 of this Act and of the Secretary's duty to

exchange public lands selected by the State for any State land contained within the boundaries of the designated wilderness area. Such notice shall contain a listing of all public lands which are located within the boundaries of the State, which have not been withdrawan from entry and which the Secretary identifies as being available to the State in exchange for such State lands as may be within the designated wilderness areas.

(c) The value of the State and public lands to be exchanged under this section shall be determined as of the date of enactment of this Act.

(d) After the receipt of the list of available public lands, if the commissioner of public lands gives notice to the Secretary of the State's selection of lands, the Secretary shall notify the State in writing as to whether the Department of the Interior consideres the State and Federal lands to be of approximately equal value. In case of disagreement between the Secretary and the commissioner as to relative value of the acquired and selected lands, the Secretary and the commissioner shall agree on the appointment of a disinterested independent appraiser who will review valuation data presented by both parties and determine the amount of selected land which best represents approximate equal value. Such determination will be binding on the Secretary and the commissioner. The transfer of title to lands or interests therein to the State of New Mexico shall be completed within two years of the date of enactment of this Act.

Sec. 105. (a) The Secretary of the Interior shall exchange any lands held in trust for an Indian whose lands are located within the boundary of the De-na-zin area referred to in section 102(a)(2) at the request of the Indian for whom such land is held in trust. Such lands shall be exchanged for lands approximately equal in value selected by the Indian allottee concerned and such lands so selected and exchanged shall thereafter be held in trust by the Secretary in the same manner as the lands for which they were exchanged.

(b) Except as provided herein, nothing in this Act shall affect the transfer to the Navajo Tribe of any lands selected by the Navajo Tribe pursuant to Public Law 93-531 and Public Law 96-305.

(c) Title to such in lieu selections shall be taken in the name of the United States in trust for the benefit of the Navajo Tribe as a part of the Navajo Reservation, and shall be subject only to valid existing rights as of December 1, 1983.

Sec. 106. Section 11 (a) of Public Law 93-531 (25 U.S.C. 640d-10) is amended--

(1) in paragraph (1) by striking out the last sentence, which begins "Such lands";

(2) by inserting after paragraph (2) the following. "Subject to the provisions of the following sentences of this subsection, all rights, title and interests of the United States in the lands described in paragraph (1), including such interests the United States as lessor has in such lands under the Mineral Leasing Act of 1920, as amended, will, subject to existing leasehold interests, be transferred without cost to the Navajo Tribe and title thereto shall be taken by the United States in trust for the benefit of the Navajo Tribe as a part of the Navajo Reservation. So long as selected lands coincide with pending noncompetitive coal lease applications under the Mineral Leasing Act of 1920, as amended, the Secretary may not transfer any United States interests in such lands until the noncompetitive coal lease applications have been fully adjudicated. If such adjudication results in issuance of Federal coal leases to the applicants, such transfer shall be subject to such leases. The leaseholders rights and interests in such coal leases will in no way be diminished by the transfer of the rights, title and interests of the United States in such lands to the Navajo Tribe. If any selected lands are subject to valid claims located under the Mining Law of 1872 the transfer of the selected lands may be made subject to those claims."; and

(3) by inserting the following new paragraph:

"(2) Those interests in lands acquired in the State of New Mexico by the Navajo Tribe pursuant to subsection 2 of this section shall be subject to the right of the State of New Mexico to receive

the same value from any sales, bonuses, rentals, royalties and interest charges from the conveyance, sale, lease, development, and production of coal as would have been received had the subsurface interest in such lands remained with the United States and been leased pursuant to the Mineral Lands Leasing Act of 1920, as amended, or any successor Act; or otherwise developed. The State's interest shall be accounted for in the same manner as it would have been if a lease had issued pursuant to the Mineral Lands Leasing Act of 1920, as amended.".

APPENDIX B

BOUNDARY DESCRIPTION

Boundary Description of the Bisti Wilderness Area

The Bisti Wilderness Area is located in the San Juan Basin, San Juan County, New Mexico, in Townships 23 and 24 North, Range 13 West, New Mexico Prinicpal Meridian, New Mexico.

Commencing at Angle Point (A.P.) 1, on the E-W centerline of sec. 30, T. 24 N., R. 13 W., NMPM, NM.

thence S. 3° 08' W., on line 1-2, 15.23 chs., to A.P. 2;

thence S. 35° 14' W., on line 2-3, 8.69 chs., to A.P. 3;

thence S. 6° 30' E., on line 3-4, 5.62 chs., to A.P. 4;

thence S. 0° 04'E., on line 4-5, 7.49 chs., to A.P. 5;

thence S. 21° 11' E., on line 5-6, 4.72 chs., to A.P. 6;

thence S. 37° 23' E., on line 6-7, 4.14 chs., to A.P. 7;

thence S. 53° 14' E., on line 7-8, 7.93 chs., to A.P. 8;

thence N. 0° 04' W., identical with a portion of the line between sections 31 and 32, 7.85 chs., to the corner of sections 29, 30, 31 and 32;

thence N. 89° 56' E., identical with the line between sections 29 and 32, 39.90 chs., to the 1/4 section corner of sections 29 and 32.

thence S. 89° 52' E., identical with the line between sections 29 and 32, 39.85 chs., to the corner of sections 28, 29, 32 and 33;

thence S. 0° 07' E., identical with the line between sections 32 and 33, 79.82 chs., to the corner of sections 4, 5, 32 and 33, on the Township line between Townships 23 and 24 North;

thence S. 89° 59.5' W., identical with the line between Townships 23 and 24 N., and sections 5 and 32, 63.80 chs., to A.P. 9;

thence S. 6° 32' E., on line 9-10, 8.80 chs., to A.P. 10;

thence S. 31° E., on line 10-11, 71.19 chs., to A.P. 11;

thence S. 61° 13 E., on line 11-12, 15.60 chs., to A.P. 12;

thence N. 87° 40' E., identical with a portion of the line between sections 5 and 3, 11.60 chs., to the corner of sections 4, 5, 8 and 9;

thence S. 0° 31' E., identical with a portion of the line between sections 8 and 9, 6.87 chs., to A.P. 13;

thence S. 61° 13' E., on line 13-14, 5.74 chs., to A.P. 14;

thence S. 61° 10' E., on line 14-15, 47.10 chs., to A.P. 15;

thence N. 72° 52' E., on line 15-16, 28.60 chs., to A.P. 16;

thence N. 76° 18' E., on line 16-17, 12.46 chs., to A.P. 17;

thence N. 55° 51' E., on line 17-18, 3.85 chs., to A.P. 18;

thence N. 62° 46' E., on line 18-19, 7.17 chs., to A.P. 19;

thence N. 47° 55.5' E., on line 19-20, 5.06 chs., to A.P. 20;

thence S. 81° 48' E., on line 20-21, 6.87 chs., to A.P. 21;

thence S. 71° 28' E., on line 21-22, 4.33 chs., to A.P. 22;

thence N. 75° 22' E., on line 22-23, 10.07 chs., to A.P. 23;

thence N. 64° 07' E., on line 23-24, 9.11 chs., to A.P. 24;

thence N. 72° 01' E., on line 24-25, 5.88 chs., to A.P. 25;

thence N. 62° 23' E., on line 25-26, 6.12 chs., to A.P. 26;

thence East, identical with a portion of the line between sections 3 and 10, 21.63 chs., to the corner of sections 2, 3, 10 and 11;

thence North, identical with the line between section 2 and 3, 80.04 chs., to the corner of section 2, 3, 34 and 35, between townships 23 and 24 north;

thence N. 0° 01' W., identical with a portion of the line between sections 34 and 35, 39.86 chs., to the 1/4 section corner of sections 34 and 35;

thence N. 0° 02' E., identical with a portion of the line between sections 34 and 35, 39.97 chs., to the corners of section 26, 27, 34 and 35;

thence N. 89° 51' W., identical with a portion of the line between sections 27 and 34, 39.99 chs., to the 1/4 section corner of sections 27 and 34;

thence N. o° 01' E., identical with the N-S centerline of section 27, 39.82 chs., to the center 1/4 section corner of section 27;

thence N. 89° 59' W., identical with the E-W centerline of section 27, 40.02 chs., to the 1/4 section corner or section 27 and 28;

thence N. 89° 55' W., identical with the E-W centerline of section 28, 79.98 chs., to the 1/4 section corner of sections 28 and 29;

thence S. 89° 55' W., identical with the E-W centerline of section 29, 79.80 chs., to the 1/4 section corner of sections 29 and 30;

thence S. 89° 39' W., identical with the E-W centerline of section 30, 5.31 chs., to A.P. 1, the point of beginning, containing 3,946.3 acres more or less.

APPENDIX C

PUBLIC INVOLVEMENT PROCESS

In December 1984, approximately one month after wilderness designation, nine representatives of the public were asked to serve as Volunteer Specialists in the wilderness management planning process. The nine volunteers represented organizations that had shown interest in such a group. The first meeting was held on February 9, 1985 to help identify issues for the Bisti Wilderness Management Plan. A field trip to the wilderness area helped to acquaint them with on-the-ground management problems. Twelve proposed issues were identified and later included in the Preplanning Analysis (April 1985).

Following the release of the Preplanning Analysis, the nine Volunteer Specialists convened on May 18, 1985 to review and discuss the proposed management issues. Discussions helped to clearly define the issues and management direction the BLM should pursue.

A public Open House was held April 2 - 5, 1985 to answer questions about the planning process and to gain additional input regarding wilderness management.

After extensive preparation and internal BLM review of the preliminary draft management plan, copies were mailed to the Volunteer Specialists. In order to facilitate maximum participation, two meetings were conducted, one in Farmington and the other in Albuquerque on October 21st and 22nd, 1985, respectively. The purpose of the meetings was to review the preliminary draft and to discuss the format and content of a public summary version of this document.

The Draft Bisti Wilderness Management Plan became available to the public in February 1986 and a forty-five day public comment period began. A continuous "open house" format was conducted during the comment period at the Farmington Resource Area Headquarters. Two public meetings were held to receive verbal comments. The first meeting was in Farmington, New Mexico, March 11, 1986 and the second in Albuquerque, New Mexico, March 17, 1986.

The formal comment period on the Draft Plan ended on April 7, 1986. After preparation, approval and printing of this Final Plan, a notice of availability will be published in the Federal Register.

Consultation and Coordination

Over 3,300 persons on the San Juan Basin Wilderness Environmental Impact Statement mailing list were mailed a copy of the document, SUMMARY OF THE DRAFT BISTI WILDERNESS MANAGEMENT PLAN. This summary publication was designed as a non-technical version of the Draft Plan intended for general public review. Three hundred copies of the Draft Plan were mailed to persons on the Bisti Wilderness mailing list. Informal consultation with the public and special interest groups has taken place throughout the planning process via personal contacts, phone calls and letters. The following local organizations and their representatives have received a copy of the Draft Plan.

U.S. Congress

The Honorable Pete Domenici
The Honorable Manuel Lujan Jr.
The Honorable Bill Richardson

Business

Paragon Resources, Inc.
Public Service Company of New Mexico
Sunbelt Mining Company, Inc.

State of New Mexico

New Mexico, Governor
Bureau of Mines and Mineral Resources
Department of Game and Fish
Energy and Minerals Department
Environmental Improvement Division
Land Commission
Museum of Natural History
Natural Resource Department
State Historic Preservation Officer

Local Governments

City of Farmington, Mayor
Farmington Chamber of Commerce
Farmington Convention & Visitors Bureau
Navajo Nation

Organizations

American Museum of Natural History
New Mexico Mountain Club
New Mexico Recreation & Park Association
New Mexico Wilderness Coalition
New Mexico Wilderness Study Committee
The Paleontological Society
Sierra Club, Rio Grande Chapter
The Wilderness Society
Volunteers for the Outdoors

Federal Agencies

Bureau of Indian Affairs
Bureau of Reclamation
Fish and Wildlife Service
Forest Service
Geological Survey
National Park Service
Soil Conservation Service

Educational Institutions

Auburn University
Brigham Young University
Eastern New Mexico University
Harvard University
New Mexico Highlands University
New Mexico State University
Princeton University
San Juan College
Southern Illinois University
University of Arizona
University of California, Berkely
University of California, Los Angeles
University of Idaho
University of New Mexico
University of Michigan
University of Wyoming
Western New Mexico University

Comment Analysis

In addition to verbal comments received at public meetings, the BLM received 28 written letters expressing concerns and questions. The number of letters received from various entities that required BLM response to substantive comments is as follows: Federal agencies (3), State government (3), local government (1), business (1), organizations (4), educational institutions (6) and individuals (3). Comments were categorized, summarized and responses were prepared. In general, commentors seemed to be familar with the Bisti Wilderness and reacted favorably to the Management Plan. Suggestions were made to add information to the text, make editorial changes and to re-evaluate proposed decisions. Changes made to the text did not change the environmental consequences of implementing this Management Plan. Therefore, a second draft will not be necessary for public review.

Comment Summaries and Responses

Sixty-two summarized comments and the responses to those comments are presented here. A complete set of comment letters and meeting notes are available to the public at the Farmington Resource Area Headquarters.

The remainder of this appendix displays public comments, in the lefthand column and BLM responses to those comments, in the righthand column. Each comment is identified by number and is listed as a statement and/or question. In most cases, the comment is a summary of a number of similar comments from various individuals. In parenthesis beneath each summarized comment is the total number of commentors concerned with that topic.

COMMENT	RESPONSE
1. Will this document represent a model for the management of other wilderness areas? If so, the guidelines must not only be relevant to the Bisti Wilderness but for all wilderness areas. (2 commentors)	Part I, Introduction, Purpose of the Plan section states that the Bisti Wilderness Management Plan is area specific and directed toward the administration of the resources and uses in the Bisti Wilderness. The Wilderness Management Policy (1981) and the 43 CFR Part 8560 are the documents that direct administration of BLM wilderness areas. Individual management plans must be consistent with the policy document and are allowed some management discretion to address unique situations that are not specifically provided for. However, new policy formulation in management plans must not be contrary to the Wilderness Management Policy. The policy document and regulations continue to provide the overall wilderness management guidance and in most cases, the policies outlined are not repeated in the management plan itself.
2. Are the Wilderness Management Goals appropriate standards for managing uses pursuant to the Wilderness Act and San Juan Basin Wilderness Protection Act? (1 commentor)	The four wilderness management goals identified in this Plan are the national goals for managing all BLM-administered wilderness. There is no management discretion to revise these goal statements as identified in the BLM Manual 8560. The stated goals are not standards. They are statements that seek to steer the emphasis of wilderness management. Wilderness management objectives are more clearly and concisely written to be consistent with the goals and to help achieve the goals. The objectives are stated so as to be realistic, measurable and achievable for they represent the desired wilderness condition standards which when evaluated, will show its success or failure. In other words, the standards for managing uses in the wilderness are represented by the objectives stated in this Plan and in the Wilderness Management Policy (1981).
3. What are the specific implementation plans and procedures in this Plan? (3 commentors)	This Management Plan sets forth the management practices and actions which will be used to maintain the area's wilderness character. The Wilderness Management Plan preceeds the specific project plan which will provide detailed project parameters which guide the development of planned actions. A

wilderness project plan represents a more precise "when, how, and by whom" level of detail in wilderness management planning. The project plans will be developed with implementation of the final management plan. Refer to Part V of the Final Bisti Wilderness Management Plan for implementation schedules.

4. What rationale was utilized in selecting the target dates for implementing the proposed management actions?

   (1 commentor)

Priority was placed on those actions that were designed to prevent and deter violations and protect the wilderness resource. Other considerations included available personnel, funding, and time limitations. Economic realities may affect future target dates as well as volunteer help and donations.

5. Will the BLM have sufficient resources and adequate funding to accomplish the wilderness goals, enforce wilderness regulations and implement this plan? Staffing seems to be inadequate with only one wilderness specialist and there is no call for increased staff and volunteers. What contingency plan does BLM have for wilderness protection in the event that budgets are cut lower than current levels?

   (4 commentors)

The Department of the Interior's policy is to manage wilderness areas under the administration of the BLM so as to preserve wilderness character, and to manage them for the use and enjoyment of the American people in a manner that will leave them unimpaired for future use and enjoyment as wilderness. Our level of management will be subject to the appropriation of funds by Congress. If budget cuts occur, implementation of various management actions may have to be postponed and implementation will have to look at top priority actions and those that are of an immediate necessity. With reduced budgets, the BLM will have to look at alternate sources of funding such as soliciting the help of volunteers and seeking donations of supplies and materials from individuals and businesses.

6. The BLM is woefully short of enforcement agents with only two special agents in New Mexico. How will the BLM catch and cite violators? What are the detailed enforcement activities to prevent and deter trespass, motorized vehicle use and vandalism?

   (4 commentors)

The BLM Albuquerque District will be acquiring a law enforcement agent, who will be able to cite visitors as per 43 CFR Part 8560.1-2, Prohibited Acts in Designated Wilderness Areas, or other laws and regulations pertinent to public lands. Routine patrols of the Bisti Wilderness by volunteers and BLM personnel will be our primary means of identifying and citing violators. Within the management actions of the wilderness elements, various indirect and direct methods to prevent trespass, motorized vehicle use and deter vandalism are presented including fencing, patrolling and public education.

7. There is a recommendation to work with the Farmington Chamber of Commerce to direct information efforts in order to realize the goals of wilderness management. How will the BLM utilize public education to implement the plan? Are there BLM bus tours to the Bisti Wilderness?

(1 commentor)

The Information and Education, Management Policy section has been revised to include a policy on coordinating information efforts with other organizations. The BLM will refrain from promoting the Bisti by carefully limiting the types and amounts of publicity released. Further studies on the appropriate material will be required. The type of material developed would promote the "no-trace" visitation concept, the pack-it-in, pack-it-out concept and similar backcountry etiquette advice.

BLM has conducted guided informational tours in the past prior to designation, but will not promote large group tours because of the fragile nature of the Bisti Wilderness. The BLM will not be conducting guided tours as a regular service or interpretive program.

8. Do volunteers have the authority to reprimand and fine violators? Are the volunteers the only people who patrol the Bisti Wilderness?

(1 commentor)

Volunteers do not have authority to reprimand and fine violators. Any violations of 43 CFR Part 8560.1-2, Prohibited Acts in Designated Wilderness Areas or any other laws or regulations must be handled by the appropriate State, county, or Federal agency possessing Federal law enforcement authority. Within the State of New Mexico, BLM has two special agents with citation authority and a ranger position.

The Bisti is patrolled by not only volunteers, but by BLM personnel from the Farmington Resource Area and occassionally by the BLM law enforcement agents.

9. Adjacent land uses are not fully addressed in the plan and the jurisdictional responsibilities over adjacent lands and their effects. What will be the impacts of the proposed Generating Station on the wilderness in terms of air quality, water seepage and pipeline location?

(3 commentors)

General Management Situation section of Part I describes the adjacent land uses. BLM policy limits the scope of wilderness planning (including analyses of impacts) to the management of resources within the wilderness boundary with few exceptions. The narrative in the Draft Plan has been revised to more fully identify adjacent land uses. Impacts of the proposed Generating Station are detailed in the 1983 Final Environmental Impact Statement on Public Service Company of New Mexico's Proposed New Mexico Generating Station.

10. In reference to outside influences on the wilderness such as visual and audible impacts, should it be noted that wilderness areas have long since been designated in those areas that are within the sights and sounds of civilization?

(2 commentors)

This is true as noted with the Sandia Wilderness towering above the City of Albuquerque. Wilderness areas located in close proximity to large population centers provides an experience that would otherwise be out of reach of many because of the prohibitive costs associated with traveling great distances. While sights and sounds of civilization are not criteria for excluding areas from being considered for wilderness designation, the impacts are documentable. This plan merely attempts to identify those existing and potential impacts to wilderness character.

11. Hasn't Sunbelt Mining Company halted surface coal mining operations? Hasn't an exchange for State-owned Section 32 been consummated with the BLM?

(1 commentor)

The BLM is not involved in the permitting or the operation of the Gateway Mine, but as far as we know Sunbelt intends to continue mining for the foreseeable future.

Prior to the permit for the Gateway Mine being approved, the BLM had approached the State of New Mexico concerning an exchange of public land for Section 32. An exchange was not consummated.

12. Why was section 32 left out of the wilderness and how will acquisition increase manageability?

(2 commentors)

Section 32, T.24N., R.13W., is not BLM-administered land. Approximatley 600 acres belongs to the State of New Mexico and the remaining 40 acres are under private ownership. Within the State portion of Section 32, there is also an ongoing surface coal mining operation.

Acquisition of Section 32 would benefit manageability through greater control on outside influences on the wilderness resource and the ability to provide additional access and portal facilities for visitors if necessary to mitigate use impacts in other areas or provide better distribution of users.

13. Has the Wilderness Area boundary been surveyed, fenced and signed?

(1 commentor)

The Bisti Wilderness boundary was surveyed by the BLM Cadastral Survey Team in May and June, 1985. An official boundary description is available in Appendix B. Signs have been posted at boundary corners at quarter section intervals between corners, and at access points leading into the wilderness. Fencing projects will be completed along the western and southern boundaries where vehicular intrusions have been a problem.

14. Is is appropriate to propose a wilderness boundary change when the problem is caused by an illegal occupant? Shouldn't the illegal occupant be removed from the wilderness? Why wasn't the problem identified during the legislative process?

(1 commentor)

The BLM did not intend for the unauthorized occupancy to be included in the wilderness. The original maps submitted to Congress had excluded the area around the dwelling, but during the legislative process and finalizing the wilderness boundary, the area was inadvertently reinstated as part of the wilderness.

Nonetheless, all parties agree that this problem must be resolved. Resolution is very complicated. Relocation of occupants that have settled on public lands is a complex issue which will not be described in detail here. The congressional record and public law have resulted in some confusion over whether this situation is indeed a trespass or otherwise illegal.

Whether resolution of this issue will be removal of the occupant from the wilderness, boundary adjustment or otherwise is out of the hands of the Resource Area and the decision will most likely be made through Congressional action.

The recommendation in the Management Plan to resolve the issue through a boundary adjustment was made for a number of reasons. First it resembles the boundary initially submitted to Congress. The deletion of about 170 acres from the existing wilderness would not adversely impact wilderness characteristics. It would resolve the unauthorized occupancy in the wilderness in an efficient and effective manner for an extremely controversial issue.

15. When will the boundary of Bisti be adjusted to eliminate the unauthorized occupant?

(5 commentors)

The BLM New Mexico has initiated a formal request for a boundary adjustment. Due to the amount of acreage involved, Congressional action will be required.

16. Are the windmill and other range facilities in trespass?

(1 commentor)

The windmill and associated water storage and drinking tanks (Job Description Report. No. 1685) have grandfathered rights and are not in trespass. The BLM drilled the well in 1963 and it was equipped in 1964 to provide water for livestock and wildlife.

17. Will a parking facility contribute to problems of man-made intrusions into the wilderness?

(4 commentors)

The parking facility is not viewed as a detriment to wilderness characteristics. By providing for visitor parking the facility can be used as a management tool: to avoid off-the-road travel by vehicles on adjacent lands; identify a distinct entrance point to the wilderness; decrease chances of vandalism of isolated vehicles (more security in numbers concept); attract visitor's to one focal point for dissemination of information, public education and law enforcement efforts; collection of visitor use data; and surveillance and maintenance purposes.

If use increases and carrying capacity of the parking facility is realized, the BLM would seek to redistribute visitor use by providing additional access points to avoid degrading wilderness characteristics of visitor experience.

18. Why isn't the parking facility clearly marked on a map?

(1 commentor)

A project plan for the parking facility will contain the level of detail such as location, construction parameters and type of materials. The ideal location for such a facility is just outside of the wilderness near the Gateway Wash which is the traditional access point just off Old State Highway 371. A number of reasons exist for not pin pointing a location in this plan. First, the pending selection of public lands adjacent to the wilderness through the Navajo-Hopi Relocation Settlement Act would negate possibilities of a facility on public lands adjacent to the wilderness near Gateway Wash. Second, a possible land exchange involving a portion of State owned Section 32 near Gateway Wash would lend itself to locating a parking facility on lands outside of the wilderness on lands currently being used for surface mining. Third, the possibility exists for a cooperative management agreement on Navajo selected lands or State-owned lands near Gateway Wash.

19. Should the BLM reconsider providing on-site facilities such as a potable water station, shelters, restrooms, and fire pits to protect wilderness characteristics and to benefit the public?

(2 commentors)

The Bisti Wilderness is considered a day use area with little overnight use known to exist. Available data shows an overall reduction in visitor use trend in an already low use area. Coupled with the area's long distance from the Farmington Resource Area Headquarters and the low levels of funding and personnel for construction and maintenance such facilities indicate an unwise

expenditure of a limited wilderness management budget. The mechanism is available to provide public facilities if necessary to protect the wilderness character, however, at this time they are not planned for.

20. Shouldn't the parking area and other developments be located out of the wilderness viewshed and not within views from the wilderness?

(1 commentor)

The aesthetics of facilities is an important consideration in the location as well as their utility. In the case of parking facility location, extraneous circumstances as described in Comment/response #18 prevents pinpointing a specific location at this time. The BLM favors the facility location near Gateway Wash just outside of the wilderness even though visible from within portions of the wilderness. The historical pattern of visitor use shows that access to the wilderness has been via Old State Highway 371 just north of the Wash. It is assumed that visitors will continue to use the popular access point to the area. Since the parking facility will double as a focus for information dissemination, wilderness education, visitor use data collection and law enforcement efforts, it is important for the facility to be used by a majority of the visitors. Recreation behavioral research has shown that traditional use patterns often meet resistance to forced institutional change. In perspective, the Gateway Wash area favorable to a parking facility will only be visible from the wilderness for a short way when construction designs are considered. Facility development will be minimal.

21. Why was the fence and registration box which is located inside the wilderness, now proposed for removal?

(1 commentor)

As stated in the Recreation and Scenic Quality, Current Situation section, the fence and registration box were installed in 1979 (five years prior to wilderness designation) to control vehicular penetration into the Bisti Badlands and collect visitor use data. Since the area has been designated as wilderness the fence and registration box are intrusions and will be removed.

22. Shouldn't the Management Plan include more data on visitation such as peak day visitation, peak hours, and frequency of group use?

(1 commentor)

The Recreation and Scenic Quality, Current Situation section has been updated to show current visitation figures to reflect the 1985 calendar year. These use figures were gathered through voluntary visitor registration and should not be considered as highly reliable regarding the amount of use, frequency of use and amount of time spent in

the area. Planned actions identified in the plan are an attempt to acquire accurate and reliable use data.

23. How much visitor pressure does the BLM anticipate and will it be an increase over past use?

    (1 commentor)

The Recreation and Scenic Quality, Assumptions section discusses visitor pressure. As it was explained, visitor use was expected to increase during this time period after designation, but then use levels were assumed to drop again. Since the Bureau does not have accurate past visitor use figures for the Bisti along with many other variables that may be involved, it is difficult to make projections.

24. What will be the impacts associated with increased visitor use?

    (3 commentors)

Overuse by visitors could result in the loss or degradation of the wilderness resource. However, visitor management techniques will be utilized in the Bisti to preserve both the wilderness resource and the visitor's wilderness experience and opportunities.

25. How will the BLM respond to possible increased visitor use if the proposed generating station is built?

    (3 commentors)

The BLM will continue to monitor visitation of the area, provide information and education, and take action when necessary to maintain acceptable levels of use that are within the capacity of the Bisti Wilderness.

26. How will the BLM document visitor use and keep records to analyze long-range impacts?

    (1 commentor)

The Recreation and Scenic Quality, Management Policy section establishes guidance for gathering visitor use data. A self-issued registration system will be implemented to complement data recorded by BLM personnel and volunteers during routine patrols.

27. How does the BLM propose to eliminate off-road vehicle use in the wilderness which is against the law?

    (5 commentors)

The BLM will be fencing portions of the exterior boundary, signing, patrolling and, if necessary issuing citations. Fencing will help provide better boundary identification and restrict vehicle access along the western boundary where previous violations have occurred. Patrol and monitoring efforts have resulted in the citation of one vehicle trespass in the Bisti Wilderness. The continued patrol, educating the public and increased efforts through law enforcement personnel should help eliminate violations from off-road vehicle use.

28. Could vehicle use by medicine men for herb gathering be allowed through special permit since it occurs on a seldom basis?

(1 commentor)

Herb gathering by medicine men will still be allowed, but the Wilderness Management Policy does not authorize the use of motor vehicles for this type of activity. Travel within BLM administered wilderness will normally be by non-motorized, non-mechanical means consistent with the preservation of the wilderness character.

29. Shouldn't a cultural inventory for the entire wilderness be completed?

(2 commentors)

Because the projected site density is low and the predicted site types are common, this Plan doesn't call for an inventory. Future inventory is possible as has been considered by the Farmington Cultural Resource Program. The sites in the wilderness are considered to be more protected than other areas in the region because of the restrictions to vehicles and energy development.

30. Have there been any surveys for the threatened and endangered species - Mesa Verde cactus?

(1 commentor)

A contractor completed a survey for this species in 1985. The Wildlife, Current Situation section has been revised to reflect this additional information. The survey did not locate this species and specifically recommended that the area no longer be considered potential habitat.

31. Will sheep - proof fences restrict wildlife movement?

(1 commentor)

There is the potential for sheep - proof fences to restrict wildlife movement. Prior to construction of these fences a project plan and environmental assessment will be prepared. Design of the fence will be consider impacts to wildlife while still maintaining its intended function.

32. Shouldn't buffer zones around raptor nests be established immediately because nest abandonment has already expected to have occurred?

(1 commentor)

Research has shown that there is a high correlation between human disturbance and nest abandonment. There is no proof that this has occurred in the wilderness. Intensive on-site public information dissemination and education efforts will be the first course of action regarding restrictions to visitor use in the wilderness. If these efforts prove to be ineffective, the necessary restrictive measures utilizing wildlife management techniques will be implemented.

33. Why does the plan fail to address botanical resources and the need to protect them?

(1 commentor)

The Bisti Wilderness is mainly characterized by an arid badlands environment. Very few species exist and vegetation is almost nonexistent with the exception of common grasses.

34. Two opposing views were expressed in regard to livestock grazing. One view commends the BLM for continuing current levels of grazing use while the other calls for the elimination of grazing. The BLM should also eliminate the use of vehicles and mechanized equipment for livestock management in order to be consistent with the management of recreation, wildlife, and cultural resources.

(6 commentors)

The Congressional record is very clear in regards to this issue. It is BLM policy that livestock grazing in wilderness shall be permitted to continue at the levels that existed at the time of wilderness designation. Any adjustment to use levels will be made through rangeland studies and not because of wilderness designation. Grazing is considered a nonconforming but accepted use in wilderness. This means that Congress has recognized that livestock grazing is inconsistent with wilderness preservation. However, due to compromises in drafting the legislation, grazing is authorized with certain grandfathered rights which are reflected in policy statements. Any request for use of motorized vehicles or mechanized equipment will be analyzed on a case-by-case basis through an environmental assessment.

35. Is grazing currently causing damage to natural and cultural resources from trampling?

(1 commentor)

Damage to natural and cultural resources from grazing is possible, but there is no evidence of this occurring in the Bisti Wilderness.

36. The current cooperative agreement with the Bureau of Indian Affairs appears to be failing to properly manage livestock in the wilderness. If this is the case, shouldn't the BLM cancel the agreement and immediately prepare an Allotment Management Plan?

(1 commentor)

The grazing cooperative agreement has authorized the Bureau of Indian Affairs to directly administer the rangeland now designated as wilderness since the late 1960s. The agreement was drafted in response to the difficulty facing the BLM to effectively administer a grazing program in this region.

Coordination between the two Federal agencies assures that the public rangelands are managed according to the law and the objectives established for administration. Due to wilderness designation, a more active management position will be taken by the BLM to administer rangeland in the wilderness as called for in the Livestock Operations, Management Action section.

An Allotment Management Plan has not been completed and is not a planned action. The BLM is currently in the process of preparing a Grazing Environmental Impact Statement (EIS) in conjunction with the Farmington Resource Management Plan (RMP) which is expected to be completed in 1988. At a minimum, a prescription for grazing management will be addressed in the RMP and the EIS will determine if an Allotment Management Plan will be prepared.

37. Should BLM undertake immediate rangeland studies, ascertain exact grazing levels and incorporate the appropriate livestock adjustments in the Final Plan?

(3 commentors)

The problems associated with livestock management in the Bisti Wilderness are identified in the Current Situation section of Livestock Operations, Part III. As called for by management actions, rangeland studies will be initiated in 1986 to inventory each Range Unit for vegetation condition and trend, utilization, actual use and the limits of acceptable change. Unfortunately, the Final Plan must be approved before undertaking the intensive rangeland studies as proposed, thereby negating any reasonable attempt at adjusting livestock numbers at this time. Revisions of the plan will incorporate the requested data.

38. Doesn't the range condition of "fair to good" with range trend "static" violate the requirements of the Federal Land Policy and Management Act (FLPMA) and the Public Range Improvement Act?

(1 commentor)

There are no known violations of any law concerning management of livestock on rangeland in the Bisti Wilderness. FLPMA requires that the public lands be managed so as to prevent unnecessary and undue degradation. The assessment of current range condition and trend does not violate this standard.

The range conditions are consistent with the objectives for the allotment and are not atypical of the range sites throughout the Bisti Community Allotment.

39. Isn't the Mineral Resources objective inconsistent with the legal requirements of the Wilderness Act? Nondegradation should be the standard for administering uses in wilderness.

(1 commentor)

Congress specially provided for certain activities and existing uses which otherwise would have been prohibited in wilderness. In the case of these nonconforming uses, the condition of the wilderness resource may be degraded as a result of an allowed use. The principle of nondegradation and the limits of acceptable change will be used as an analysis tool for the reasonable mitigation of impacts and as a standard for determining the condition to which the area will be returned where and when rehabilitation is appropriate. However, if lessees exercise their valid existing rights, the wilderness will be managed to prevent unnecessary or undue degradation of the area's wilderness character.

The Federal Land Policy and Management Act (1976) directs that all uses of the public lands be conducted so as to prevent unnecessary or undue degradation. In wilderness areas, this means that the BLM must manage the nonconforming but accepted use so as to prevent unnecessary or undue degradation of the area's wilderness character as a min-

imum standard for administering such use. As on nonwilderness public lands, some of the nonconforming but accepted uses may be restricted or entirely excluded where particularly sensitive values occur or where the public interest would be better served by restricting or excluding them.

40. What is the authority for issuing coal leases involving Preference Right Lease Applications (PRLA) in wilderness?

(1 commentor)

There are no current coal leases in the Bisti Wilderness. One application for a mineral lease, called a PRLA (No. 11916), comprises 320 acres in the wilderness. This PRLA was drilled under a prospecting permit issued on December 1, 1970 pursuant to the Mineral Leasing Act of 1920, as amended. The 43 Code of Federal Regulations 3430 outlines the steps for processing PRLA's. Holders of PRLA's have no valid existing rights, but do have the right to application adjudication or completion of the PRLA process. The BLM is currently appraising the value of coal underlying the PRLA. If commercial quantities are determined to exist, the PRLA holder would normally be issued a lease which will contain rights to coal. However, the Wilderness Management Policy is very clear in withdrawing all forms of appropriations under the mining laws and from disposition under all laws pertaining to mineral leasing as of January 1, 1984. Therefore, there is no legal authority for issuing coal leases in the wilderness. Every attempt to exchange the value of coal in the PRLA for coal outside of wilderness will be made.

41. The topic of valid existing rights is very confusing. What are these rights in regards to mineral development in the Bisti Wilderness?

(1 commentor)

The valid existing right provision of the wilderness Management Policy (1981) clearly applies to only valid rights outstanding ("existing") as of the date of wilderness designation, October 30, 1984. If the claimant can show evidence to the BLM that a valid discovery was made prior to wilderness designation, valid existing rights will be recognized and defined in the lease.

Presently, only the existing oil and gas leases contain rights to minerals in the wilderness. The only leases where wilderness impairing activities could occur would be leases which were issued prior to the passage of the 1976 Federal Land Policy and Management Act. There are no pre-FLPMA leases in the Bisti Wilderness. Because of the "non-impairment" stipulation in the three existing

post-FLPMA leases, it is assumed, for the purposes of analysis, that such leases would be voluntarily terminated or allowed to expire. No actions that would impair wilderness values will be allowed.

42. How will the BLM determine whether a scientific permit application will be issued or denied?

(1 commentor)

Permit applications for scientific uses in the wilderness will be considered on a case-by-case basis. The overriding criteria is that no degradation of wilderness character will be allowed to occur. Evaluation of each permit application will consider the specifics of the proposal and analysis will be on a project-by-project or case-by-case basis.

43. Would you interprete the paleontological resource objective? There is no logical line of reasoning to abandon an exposed fossil in the field to be destroyed by erosional processes for the purpose of preserving wilderness.

(5 commentors)

The subject area was designated as wilderness by Public Law 98-603 as a component of the National Wilderness Preservation System. All BLM wilderness areas are managed according to guidance provided in the Wilderness Management Policy (1981). Management objectives are established for each wilderness resource to be consistent with applicable laws, policies and national goals for wilderness management.

An interpretation of the paleontological resource objective is as follows. Natural conditions and ecological processes will be allowed to operate freely with as little human influence or disturbance as possible. The intrinsic nature of wilderness is the allowance of natural processes to occur without human interference. Natural erosion of paleontological resources will be allowed to occur as is the case with any other resource in the wilderness. Study or management including stabilization or collection of resources will be considered on a case-by-case basis to protect or preserve a particular paleontological value, but not to the detriment of the wilderness.

The disturbance to natural ecological conditions by paleontological studies is not so much the issue because most disturbance can be mitigated to prevent degradation of the wilderness. The issue involves the removal of finite resources from the wilderness which to some degree degrades wilderness characteristics. Since scientific investigation is a legitimate use in wilderness, the

44. Two views were expressed concerning the definition of a significant fossil. One view suggested the revision of the stated criteria. The other suggested deleting the definition because of the level of significance cannot be determined in the field.

(9 commentors)

check to prevent degradation is on a case-by-case analysis. Extraction of fossils with known scientific value may be allowed.

The attempt to discriminate between significant and common fossils was to facilitate understanding of the Wilderness Management Policy (1981). The policy states that paleontological resources will be available for a variety of uses in wilderness including recreational, scenic, scientific, educational, conservation and historical. Two conflicting uses center around the issue of removing fossil material from the wilderness. The Policy does not provide guidance on what fossils or how much material will be allowed to be removed but, it does permit BLM Management to formulate management plan direction to guide case-by-case analysis. Management used this discretion authority to further define the intent of the Policy and to strike a compromise between two competing uses.

Scientific uses of fossils involving removal of resources conflicts with recreational and scenic uses of fossils. Removal of fossil material is often necessary for scientific study and the opportunity to observe and study paleontological values in wilderness is dependent on fossils remaining in the wilderness which are fundamental purposes of natural area preservation.

Since scientific research often involves the study of significant fossils and recreational opportunities are not necessarily dependent on level of scientific significance, some delineation can be made. By adopting a policy that significant fossils will be available for scientific uses in the wilderness, a solution to the dilemma seemed inevitable. This would result in a compromise between competing uses and would facilitate public and professional understanding of the Wilderness Management Policy (1981) and regulations. However, due to technical difficulties in the wilderness planning process, guidance will be issued at a later time. All reference to fossil significance is deleted from the text.

45. To prevent the entire wilderness from being dug up over time by paleontological excavations or otherwise depleted of fossil resources, shouldn't the BLM consider other criteria for allowing paleontological research such as; the relative availability of fossils elsewhere, whether similar fossils are available outside the wilderness, whether similar fossils are available for study in an existing institution, and whether the fossils removed will be readily available to other scientists?

(1 commentor)

These criteria are available in the Wilderness Management Policy, paleontological permit stipulations, or in the Scientific Study and Data Collection, Management Policy section. To further clarify the situation, these criteria are added to the above section.

46. Why is there a proposal to establish a committee to technically assist the BLM with review of permit applications for paleontological research? One view supported the committee with ideas to expand the membership to include other technical specialists and the public. The other view recommended that a committee not be established because of increased paperwork and the possibility to work through an existing group affiliated with the New Mexico State/BLM Memorandum of Understanding concerning paleontological resources.

(4 commentors)

The proposal to establish a committee to review paleontological permits was in response to a request to provide technical assistance to the BLM on the permitting process. After analysis of public comments and a study of its feasibility, the proposal has been dropped from further consideration in this planning effort. The reason is the inability to keep the committee small enough to ensure timely review while allowing for full participation of the many technical specialists and the public who wish to participate.

47. Any policy that requires fossils removed from the Bisti Wilderness be reposited within the State of New Mexico: may be non-defensible on legal grounds; violate the very essence of scientific inquiry; would discourage out-of-state institutions that have funds and appropriate credentials; promote geographical provincialism of a National resource; would not allow established reputable collections to be close to where the technical research is carried out; and may be a tax burden to the people of New Mexico with unwanted expenses of maintaining permanent repositories.

(7 commentors)

The statement as described in the Paleontological Resources, Management Policy section has been revised. The policy was initially formulated to help assure that New Mexico institutions would have adequate fossil material for scientific study, education and public display. Both New Mexican and State institutions have expressed concerns that current low budgets and priorities for research, curation, storage and display might affect future museum collections for public display and educational values in New Mexico.

Collections of fossils removed from the wilderness will normally be curated at the facility named in the approved permit. However, all fossils remain the property of the United States Government. Preliminary and final reports submitted to the BLM New Mexico State Director will provide a catalog and accession numbers of all fossils removed from

the wilderness. Interested researchers may obtain copies of these reports from the BLM State Director. Specimens may be borrowed for display through cooperative agreement with the original institution and the BLM New Mexico State Director.

48. Does it logically follow to allow free collection of rocks and minerals by amateurs while restricting professional scientists from collecting paleontological resources for bonafide purposes of research?

    (1 commentor)

The Wilderness Management Policy (1981) states that "recreational or hobby collecting of mineral specimens will be allowed in wilderness." There is no management discretion to prohibit recreational or hobby collection of mineral specimens. This management plan further defines this policy allowing collection of non-fossil mineral specimens only. Any collection of paleontological materials will be analyzed on a case-by-case basis through the permitting process. In perspective, there is actually very little non-fossil material available in the wilderness and collection of fossil material including petrified wood without a permit is prohibited.

49. Why state the policy that the BLM will keep locality information confidential when it really cannot for legal reasons?

    (1 commentor)

It is the position of the BLM not to voluntarily release locality information concerning sensitive resource values for public information. However, sensitive information may be released for the purposes of bonafide scientific or educational purposes for which appropriate credentials are presented.

50. Shouldn't BLM place more emphasis on the fragility of the paleontological, cultural, and unique formations?

    (1 commentor)

Refer to the Information and Education, Management Action section which explains the special attention that will be given to sensitive resources via off-site media and on-site education efforts. Exact wording and emphasis of these efforts will depend on the medium selected. Please submit any suggestions on additional protective measures to the Resource Area Office.

51. Why isn't there an Air Quality objective?

    (1 commentor)

Air quality was not chosen as a wilderness element by BLM professionals or public Volunteer Specialists working on this Plan because it is a non-issue. However, air quality is considered an important element in wilderness management and is discussed in the Recreation and Scenic Quality, Management Policy section. The policy is that Federal Class II and State air quality standards will be maintained.

52. Why is work on the air quality limits of acceptable change indicators and standards postponed until 1987?

(1 commentor)

The 1983 Final Environmental Impact Statement on the Bisti, De-na-zin, and Ah-shi-sle-pah Proposed Wilderness Areas concluded that Federal and State air quality standards were being met. Conditions have remained fairly constant in terms of regional emmissions since completion of the EIS, air quality in believed to be relatively the same. Therefore, this workload did not receive as high priority as actions deemed necessary to immediately protect the wilderness resource.

In addition, LAC indicators and standards are actually set by the 1972 Clean Air Act, as amended, and applicable State law which will be adopted by the BLM. Actual monitoring of air quality is not proposed by BLM. Data gathered by nearby Chaco Canyon National Historical Park and other monitoring stations associated with mineral development in the San Juan Basin will be utilized to evaluate the limits of acceptable change.

53. What is the Limits of Acceptable Change (LAC) process?

(3 commentors)

A brief description of the LAC process is described in Part IV, Wilderness Management Strategy. Refer to the document LIMITS OF ACCEPTABLE CHANGE SYSTEM by Stankey, et al. 1985 for a more complete description.

There appears to be extreme misconceptions about the LAC process from the public comments received. Unfortunately, public education about the LAC has been a slow process partially due to the limited number of implemented systems. However, many social scientists and wilderness professionals consider the LAC concept superior to the carrying capacity concept which has not lived up to its billing in natural area preservation.

54. Visitor use and wilderness preservation may conflict in the future. How does this dilemma relate to the Limits of Acceptable Change (LAC) process? Would it be helpful to list the criteria, resource indicators and the frequency of monitoring needed to implement this process?

(2 commentors)

The LAC process is described in Part IV and is designed to be a proactive management tool that seeks to identify, record and evaluate wilderness resource conditions. It allows for a better understanding of the relationships between human use impacts and wilderness values, a communication medium to facilitate understanding for certain actions, and a set of procedures which improves management effectiveness and efficiency among other things. The LAC process will signal the need for some management action to cor-

rect a decrease in wilderness quality which might not be noticed through another medium in order to prevent degradation.

The LAC process represents activity level planning or project planning which occurs after approval of the Final Wilderness Management Plan. A LAC project plan is called for by this Plan and will be available for public review. The indicators identified include visual, range, wildlife, social environment, and air quality. The criteria are dependent on the indicator. For example, the criteria for air quality would be selected from the Clean Air Act of 1972, as amended which outlines the National Ambient Air Quality Standards. The frequency of monitoring each indicator also depends on the indicator. Visual indicators could be monitored on a quarterly basis whereas monitoring golden eagles could take place before and after the nesting season.

55. The management plan doesn't call for complete implementation of the LAC System until 1988 including collection of baseline data and selection of indicators and standards. Shouldn't this be completed prior to wilderness designation?

    (1 commentor)

A fully implemented LAC system at the time of wilderness designation would be ideal and sounds very good in theory. However, economic realities including the investment of time and personnel required to implement such a complex and detailed system must be considered in the BLM budgeting process. The support needed to implement the LAC system would usually come through approval of a plan of action such as the Wilderness Management Plan.

56. If the BLM Manual 8561 requires an evaluation of the limits of acceptable change before wilderness use restrictions can be established, how can the BLM prevent overuse of the wilderness prior to LAC system completion?

    (1 commentor)

The authority to prevent degradation of wilderness is provided in the 43 Code of Federal Regulations 8560. The BLM will take the necessary actions as planned for in the Wilderness Management Plan or as directed by the Wilderness Management Policy (1981) to protect the wilderness resource.

The BLM Manual 8561 seeks to prevent the establishment of visitor use restrictions such as quota or reservation systems based on unfounded information and analyses that the LAC system would provide.

57. How can the Draft Environmental Assessment for the Bisti Wilderness Plan comply with the National Environmental Policy Act in the absence of a fully implemented LAC System?

(1 commentor)

A review of the proposed actions in the Management Plan has led to the determination that significant impacts would not be caused by selecting the preferred alternative. The National Environmental Policy Act requires an assessment of the environmental consequences of the preferred alternative. In fact, the cumulative impacts of the preferred alternative are positive in the sense of NEPA.

The proposed action of implementing a LAC system in the preferred alternative or the absence of the system would have practically no effect on the finding of no significant impact. Thus, the preferred alternative of the Bisti Wilderness Management Plan complies fully with NEPA.

58. Isn't a fully implemented LAC system needed to properly manage and protect wilderness?

(1 commentor)

The Wilderness Management Policy and 43 Code of Federal Regulations 8560 guide the conduct of wilderness management activity for compliance with applicable law. The BLM further requires the completion of an individual management plan for each wilderness area (BLM Manual 8561). The mission of the plan is to describe the actions that will be necessary to preserve the wilderness resource in order to comply with policy and regulations. A fully implemented LAC system is not needed to protect wilderness in light of regulations but is regarded as being extremely helpful in wilderness management.

Implementation of the LAC system is described in a number of the management actions called for by the Management Plan. It not only represents the strategy that will be utilized in wilderness management, it is actually one of the project plans or activity plans proposed by the Management Plan. It is lower level or site-specific planning that is achieved after the completion and approval of the Management Plan.

59. Isn't the entire Wilderness Management Plan dependent on the LAC system?

(1 commentor)

Two approaches are prevalent in wilderness management planning, the goal-objective approach and the limits of acceptable change approach. Either planning approach can be used effectively in wilderness management. Both approaches are used in the Bisti Wilderness Management Plan.

The goal-objective approach is described in Parts II and III. The objectives represent the desired condition that management hopes to achieve. The management actions are the implementation steps to help achieve the desired condition.

The LAC approach is described in Part IV. The LAC resource indicators act as the objectives or desired wilderness conditions. The LAC standard represents the limit of change that must not be exceeded or the desired wilderness condition will not be met. Management actions are then prescribed to bring the undesired condition back into conformance with the objective or standard.

The goal-objective approach is based on existing circumstances which are known and can be planned for by outlining a distinct management action to correct or prevent an existing or potential problem. The planned actions as described in Part V are the end product of the Wilderness Management Plan which is supported by the planning effort. The Plan is not dependent on the LAC system but rather on the goal-objective approach which utilizes the LAC process as a planned action to meet the objectives of the plan.

The main point is that either approach can be used independently in wilderness management planning to form the basis of an effective Management Plan. This Plan incorporates both approaches.

60. Since nonconforming but accepted uses in wilderness present the greatest potential for degrading wilderness values, why are these uses omitted from the LAC system?

(1 commentor)

Simply, the nonconforming uses such as livestock grazing or mineral development are not indicators that measure change in the ecological or social environment. Most all human use, whether on site or off can influence or impact the wilderness. The LAC system incorporates the resource indicators that measure change in the ecological and social environment of the wilderness regardless of the use. Examples of indicators for livestock grazing might include range condition, trend, and actual use for a specified period of time.

61. Has the BLM called for public involvement in the implementation of the LAC system?

(1 commentor)

Not only has the BLM employed an intensive public involvement campaign in this planning effort, considerable interest has been shown from various individuals and organizations in LAC system development and review. To this point, some form of public input has been incorporated in every step. The Volunteer Specialists (refer to Appendix F) helped to select the issues that are prevalent in the Bisti Wilderness which will be used in LAC system development and in choosing resource indicators. A doctorate candidate and a Wilderness Experience Class from the University of New Mexico began a pilot program in 1985 for evaluating the visual resource indicators by implementing the Visual Impact Evaluation System. This has been the extent of the LAC system thus far and future steps are dependent on Management Plan budget appropriations. Anyone interested in development and review of the LAC system is welcome to participate.

62. Will the public comment period of 30 days apply to all actions in the Bisti?

(2 commentors)

It is our policy to try to notify various individuals and interest groups 30 days prior to implementation of authorized activities. There will be circumstances such as emergencies or urgent situations when a 30-day notice can not be provided.

APPENDIX D

U.S. Department of the Interior
Bureau of Land Management

Albuquerque District Office
Farmington Resource Area

Farmington, New Mexico

ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT FOR THE IMPLEMENTATION OF THE BISTI WILDERNESS MANAGEMENT PLAN

May 1986

ABSTRACT

In compliance with the National Environmental Policy Act (1969) and the BLM Manual 8561 - Wilderness Management Plans, an assessment has been made of the environmental consequences of implementing the Bisti Wilderness Management Plan. The result of this assessment was that the preferred alternative would not induce significant environmental impacts.

I. INTRODUCTION

This Environmental Assessment satisfies the Council on Environmental Quality regulations of implementing the National Environmental Policy Act (1969) requirements of identifying a preferred alternative in order to adequately consider and document the environmental consequences.

Background

The 1983 Final Bisti, De-na-zin, Ah-shi-sle-pah Proposed Wilderness Areas Environmental Impact Statement (EIS) analyzed the environmental consequences of wilderness designation. This EIS concluded with the finding of no significant impact for the designation of the Bisti Wilderness Study Area as Wilderness. This Environmental Assessment addresses the environmental consequences of implementing the preferred alternative of the Bisti Wilderness Management Plan.

Purpose for and Need of the Proposed Action

The purpose for the proposed action is to fulfill the BLM Manual 8561 requirement that a management plan be completed for BLM-administered wilderness areas within two years after designation. The need of the proposed action is to comply with the legislation and national policy and to adequately manage the area as wilderness.

Compatibility With Existing Land Use Plans

Due to the passage of the San Juan Basin Wilderness Protection Act (1984), there is no valid land use plan for the Bisti Wilderness Area. The 1981 Chaco Management Framework Plan provided administrative direction for the Wilderness Study Area before wilderness designation. The Farmington Resource Management Plan which will address the Bisti Wilderness Area is not scheduled to be completed until 1988.

II. ALTERNATIVES INCLUDING THE PREFERRED ALTERNATIVE

Four alternatives are analyzed in this environmental assessment. The preferred alternative represents the proposed action which is described below.

Preferred Alternative (Proposed Action)

Under this alternative, the management actions prescribed in the Bisti Wilderness Management Plan would be implemented. A detailed description of the proposed action is located in Part III. Wilderness Management Program, Management Action section for each element. A descriptive summary of the management actions the BLM would implement include: fencing portions of the exterior boundaries; constructing a parking facility; reclaiming affects of unauthorized activities; collecting management data; developing fire management and search and rescue plans; providing information and education materials; and retaining administrative responsibility of the area.

No Action Alternative (Amend the Existing Plan)

Under this alternative, the Bisti Wilderness Management Plan would not be implemented and the area would continue to be managed under the policy guidance of the 1981 Wilderness Management Policy (BLM Manual 8560). The 1981 Chaco Management Framework Plan which is the existing land use plan for the area would be amended.

Human Use Enhancement Alternative

Under this alternative, the BLM would allow human use and manipulation of the wilderness resource within the framework permissable in the Wilderness Act (1964) and the San Juan Basin Wilderness Protection Act (1984). A descriptive summary of the management actions the BLM would implement include: facilitate and encourage human use of the area through promotion and public relation efforts; provide vehicle access to several boundary locations; construct parking facilities with modern conveniences (i.e., restrooms, running water); construct trailheads and trails with displays and signing activities to aid in environmental interpretation; and allow motorized vehicle access with minimum restrictions to collection of fossils, artifacts and petrified wood.

Human Use Exclusion Alternative

Under this alternative, the BLM would seek to exclude human use and manipulation of the wilderness resource within the framework permissable in the Wilderness Act (1964) and the San Juan Basin Wilderness Protection Act (1984). A descriptive summary of the management actions the BLM

would implement include: restrict and heavily stipulate all human uses of the area in order to allow natural ecological processes to function with minimum human influence; fence the entire boundary; allow no removal of fossils, artifacts, petrified wood or other natural materials; increase boundary and interior patrols; and implement a reservation system to control the amount of recreational use that will be allowed to occur.

III. AFFECTED ENVIRONMENT

The affected environment is described in detail in Part III. Wilderness Management Program in the Current Situation section of each wilderness element.

IV. ENVIRONMENTAL CONSEQUENCES

The preferred alternative (proposed action) would not have significant impacts on the wilderness resource. The proposed action complies exclusively with the finding of no significant impact as per the 1983 Environmental Impact Statement for the Bisti, De-na-zin, Ah-shi-sle-pah Proposed Wilderness Areas. There would be minor impacts to some of the environmental factors as described below:

Preferred Alternative (Proposed Action)

Economic Environment

Some commercial or business opportunities would be restricted. This impact is considered to be minute due to the lack of current demand.

Managerial Environment

The opportunities to resume the type and level of management, monitoring and development would be restricted. This impact restricts administrative actions but does not prohibit them. The impacts of restricting actions will occur in terms of funding and work efficiency and not effectiveness and thus, is not considered a significant impact.

Social Environment

Visitors to the area will be without the modern conveniences of civilization and therefore, may be exposed to personal danger and risks. This impact is considered small due to the inherent dangers of wilderness and the information and education efforts warning of these dangers. There would be impacts to paleontologists and others requesting motorized vehicle access due to the exclusion of this type of use on other than a case-by-case basis.

Physical and Biological Environment

The proposed action is viewed as having positive impacts on wilderness values by reducing, reclaiming and preventing the effects of unauthorized uses. There would be natural impacts to resources through erosional forces which is considered to be acceptable in wilderness. Impacts to the Ferruginous Hawk (Federal Candidate species) is possible, but mitigating measures will facilitate compliance with the Endangered Species Act.

No Action Alternative (Amend the Existing Plan)

The environmental impacts would be very similar to the ones descibed in the preferred alternative. The impacts to the social and the physical and biological environments would be increased due to the current level of unauthorized uses and their effects on naturalness, solitude and primitive recreation. Without a plan of action to prevent and reclaim the effects of unauthorized uses such as the ones described in the preferred alternative, the impacts are considered to negatively impact the wilderness character of the area.

Human Use Enhancement Alternative

Economic Environment

Commercial and business opportunities would be less restrictive. Due to the current lack of demand, this is not considered to be a significant impact.

Managerial Environment

The opportunities to resume the type and level of management, monitoring and development would be less restrictive. Motorized vehicle use would be allowed for resource management within the framework permissable in applicable laws and regulations, as well as stabilization, improvements and interpretive activities. The impacts from these activities would degrade wilderness values below present levels and potentially to unacceptable levels.

Social Environment

Increased developments and modern conveniences would most likely reduce personal danger and individual risk. These improvements may increase the number and types of users which may act to degade wilderness values below the present levels. Crowding and increased regulations may degrade the outstanding opportunities for solitude and primitive recreation.

Physical and Biological Environment

Increased levels and different types of human use may act to degrade the wilderness value of naturalness below the present level through the removal of fossils, artifacts, petrified wood and other natural resources, and the cumulative impacts of visitors on the fragile badlands environment along trails and at popular scenic areas. Impacts to the Ferruginous Hawk (Federal Candidate species) would be increased.

Human Use Exclusion Alternative

The impacts under this alternative are considered positive in relation to the wilderness resource. By virtually eliminating human use of the area, natural ecological processes would function with as little human influence as possible. There could be impacts to the managerial environment because of the increased need for funding and personnel required to implement this alternative and effectively assure compliance with the plan. There would be impacts to those requesting motorized vehicle access within the wilderness.

V. CONSULTATION AND COORDINATION

The following organizations and their representatives have been sent a copy of this document which will also be made available to over 3000 individuals on the wilderness mailing list.

U.S. Congress

The Honorable Pete Domenici
The Honorable Manuel Lujan Jr.
The Honorable Bill Richardson

Business

Paragon Resources, Inc.
Public Service Company of New Mexico
Sunbelt Mining Company, Inc.

State of New Mexico

New Mexico, Governor
Bureau of Mines and Mineral Resources
Department of Game and Fish
Energy and Minerals Department
Environmental Improvement Division
Land Commission
Museum of Natural History
Natural Resource Department
State Historic Preservation Officer

Local Governments

City of Farmington, Mayor
Farmington Chamber of Commerce
Farmington Convention & Visitors Bureau
Navajo Nation

Organizations

American Museum of Natural History
New Mexico Mountain Club
New Mexico Recreation & Park Association
New Mexico Wilderness Coalition
New Mexico Wilderness Study Committee
The Paleontological Society
Sierra Club, Rio Grande Chapter
The Wilderness Society
Volunteers for the Outdoors

Federal Agencies

Bureau of Indian Affairs
Bureau of Reclamation
Fish and Wildlife Service
Forest Service
Geological Survey
National Park Service
Soil Conservation Service

Educational Institutions

Auburn University
Brigham Young University
Eastern New Mexico University
Harvard University
New Mexico Highlands University
New Mexico State University
Princeton University
San Juan College
Southern Illinois University
University of Arizona
University of California, Berkely
University of California, Los Angeles
University of Idaho
University of New Mexico
University of Michigan
University of Wyoming
Western New Mexico University

FINDING OF NO SIGNIFICANT IMPACT
AND
RECORD OF DECISION

ENVIRONMENTAL COMPLIANCE

We have reviewed Environmental Assessment NM-016--86-25 and have determined that the proposed action does not constitute a major Federal action significantly affecting the quality of human environment in the sense of the National Environmental Policy Act, 102(2)(C) and, therefore, an Environmental Impact Statement is not required.

Prepared by: William L Overbaugh Specialist Date: 6/16/86

Concurred by: Douglas J. Bunger Supervisor Date: 6/16/86

Approved by: John Mucker Acting Area Manager Date: 6/16/86

REVIEW/DECISION

Review

I have reviewed Environmental Assessment NM-016-86-25 and have found that both the document and recommendations are technically adequate and that consideration has been given to all applicable resource values. Therefore, I recommend the proposed action be approved.

Reviewed by: Douglas J. Bunger Supervisor Date: 6/16/86

Decision

I have reviewed Environmental Assessment NM-016-86-25 and approve the above recommendation as the decision of the Bureau.

Approved by: John Mucker Acting Area Manager Date: 6/16/86

APPENDIX E

PLAN MONITORING AND REVISION PROCEDURES

Monitoring the Bisti Wilderness will include three procedures. First, general monitoring will be accomplished through patrols by BLM personnel, law enforcement agents and volunteers as described in Part III. Wilderness Management Program, in the Administrative element section of this document. Second, resource-specific monitoring will be accomplished according to established guidelines of each program. Third, the limits of acceptable change system will monitor site-specific resource indicators throughout the area. Monitoring procedures and records will most likely indicate the need for plan revision.

Revision of this plan will be accomplished on two levels. This plan has been prepared for a ten year planning period with evaluations at five year intervals. The first level of revision will involve plan revision based on: a massive increase in visitation, a major environmental change in the wilderness resource, or a cumulative increase in user-caused resource impacts that call for more restrictive measures for resource protection. A second level of revisions include information updates or minor revisions which will be written into the working document, dated and initialed.

APPENDIX F

LIST OF PARTICIPANTS

PLAN PREPARATION

Name/Title	Primary Responsibility	Education	Related Experience
Barbara Anne am Ende Geologist	Paleontolgical Resources	BS Geology University of Iowa	1 year Paleontologist
LouAnn Jacobson Ball Archeologist	Cultural Resources	MA Anthropology University of New Mexico	9 years Archeologist
Danny S. Charlie Navajo Coordinator/ Range Conservationist	Livestock Operations	High School Diploma Ignacio, Colorado	19 years Range Management
Myrna Finke Visual Information Specialist	Printing Coordinator, Cartographics	Certificate - Graphic Arts University of New Mexico	2 years Visual Information Specialist 4 years Cartographic Technician
Connie Howell Clerk-Typist	Word Processing	High School Diploma Rollins, Wyoming	6 years Clerk-Typist
Robert Moore Supv. Realty Specialist	Naturalness Section	BS Range-Forest Management Colorado State University	4 years Natural Resource Specialist 4 years Supv. Natural Resource Specialist 4 years Supv. Realty Specialist
Kathy I. Ollom Supv. Clerical Assistant	Word Processing	High School Diploma Clovis, New Mexico	3 years Supv. Clerical Assistant
F.M. O'Neill Supv. Natural Resource Specialist	Paleontological Resources	MA Biological Anthropology University of New Mexico	5 years Paleontologist
William L. Overbaugh Outdoor Recreation Planner	Team Leader	MA Outdoor Recreation University of New Mexico	1 year Recreation Tech. 3 years Outdoor Recreation Planner
Marcia Petta Wilderness Coordinator	Mineral Resources, Fire	MS Geosciences University of Arizona	3 years Geologist 4 years Environmental Scientist 1 year Wilderness Coordinator

Jim Ramakka Wildlife Biologist	Wildlife Biologist	MS Wildlife Ecology University of Maine	13 years Wildlife Biologist
Marilu Waybourn Writer-Editor	Format Editor	AA Radio Communication Stephens College, Missouri	13 years Newspaper Production 2 years Public Relations

PLAN REVIEW - VOLUNTEERS

Name	Organization
Judy Bishop	State Department of Natural Resources Santa Fe, New Mexico
Dr. Steve Clark	Chamber of Commerce Farmington, New Mexico
David Glowka	Sierra Club Albuquerque, New Mexico
Fred Greyeyes	KNDN Radio Farmington, New Mexico
Ivan K. Holliday	Public Representative Farmington, New Mexico
Robert A. Jackson	Sunbelt Mining Co. Inc. Albuquerque, New Mexico
Dr. Spencer Lucas	University of New Mexico Albuquerque, New Mexico
Margie Ranc	Visitors and Convention Bureau Farmington, New Mexico
Clyde Underwood	Paragon Resources Inc. Albuquerque, New Mexico

APPENDIX G

COMMON SPECIES OF WILDLIFE

Colorado side-blotched lizard
Yellow-headed collared lizard
Prairie rattlesnake
Bull snake
Scaled quail
Mourning dove
Horned lark
Says phoebe
Black-throated sparrow
Great-horned owl
Ferruginous hawk
Golden eagle
Rock wren
House finch
Coyote
Black-tailed jack rabbit
Red Fox
Cottontail rabbit
Pocket mouse
Deer mouse
Pocket gopher
Kangaroo rat
Northern grasshopper mouse
Antelope ground squirrel

GLOSSARY

ALLOTMENT. An area of land designated and managed for grazing of livestock.

ALLOTMENT MANAGEMENT PLAN (AMP). A documented program which applies to rangeland operations on public land, which is prepared in consultation with the permittee(s) or lessee(s) involved, and which: (1) prescribes the manner in and extent to which livestock operations will be conducted in order to meet the multiple-use, sustained-yield, economic, and other needs and objectives as determined for public land through land use planning; (2) describes the type, location, ownership, and general specifications for the rangeland developments to be installed and maintained on public land to meet the livestock grazing and other objectives of land management; and (3) contains such other provisions relating to livestock grazing and other objectives as may be prescribed by the authorized officer consistent with applicable law.

ANIMAL UNIT MONTH (AUM). The amount of forage required to sustain the equivalent of one cow, one horse, two elk, three Barbary sheep, five domestic sheep, five goats, five deer, or ten antelope for one month.

CATEGORY 2 CANDIDATE SPECIES. A species which is being considered by the U.S. Fish and Wildlife Service for listing as threatened or endangered but for which sufficient biological data for proposed listing is not yet available.

CUMULATIVE IMPACT. The aggregate impact of existing and proposed activities. Individual intrusions when considered by themselves may not impair the wilderness; however, when combined with other existing and proposed substantially unnoticeable impacts, the total effect may be sufficient to impair the wilderness.

IMPACT. The effect, influence, alteration, or imprint of a human activity.

IMPAIR. To diminish in value or excellence.

KNOWN GEOLOGIC STRUCTURE (KGS). A trap in which an accumulation of oil and gas has been discovered by drilling and which is determined to be productive. Its limits include all acreage that is presumptively productive [43 CFR 3100.0-5(a)]. Lands underlain by a KGS may be leased only through a competitive system.

LIMITS OF ACCEPTABLE CHANGE (LAC). The amount of human-caused change to biophysical or social components which are tolerable without the loss of wilderness character.

MANAGEMENT ACTION. An action carried out by BLM.

MECHANICAL EQUIPMENT. Use of hand or power machinery or tools.

PREFERENCE RIGHT LEASE APPLICATION (PRLA). A formal request made to the BLM for a non-competitive coal lease. Holders of prospecting permits in the San Juan Basin filed PRLA's with the BLM New Mexico State Office between 1971 and 1973. These individuals or companies were required to demonstrate that, during the period of the permit, they had discovered commercial quantities of coal.

PRIMITIVE AND UNCONFINED RECREATION. Nonmotorized and nondeveloped types of outdoor recreational activities.

RAPTORS. Any predatory bird such as a falcon, hawk, eagle, or owl that has feet with sharp talons or claws adapted for seizing prey and a hooked beak for tearing flesh.

RECREATION OPPORTUNITY SPECTRUM (ROS). A framework for stratifying and defining classes of outdoor recreation opportunity environments.

RIGHT-OF-WAY. An easement or permit which authorizes public land to be used for a specific purpose that generally requires a long narrow strip of land; examples are roads, powerlines, pipelines, etc.

SAN JUAN BASIN. A large structural depression in the Colorado Plateau province.

SOLITUDE. Outstanding opportunities for solitude or primitive and unconfined recreation are wilderness characteristics examined in the intensive wilderness inventory. Factors contributing to opportunities for solitude are vegetative screening, topographic relief, vistas, and physiographic variety. 1. The state of being alone or remote from habitations; isolation. 2. A lonely, unfrequented, or secluded place.

UNNECESSARY OR UNDUE DEGRADATION. Impacts greater than those that would normally be expected from an activity being accomplished in compliance with current standards and regulations and based on sound practices, including use of the best reasonably available technology.

VISUAL IMPACT EVALUATION SYSTEM (VIES). The VIES is a management tool designed for the longitudinal collection of information concerned with monitoring and evaluating the visual "limits of acceptable change."

VISUAL RESOURCE MANAGEMENT (VRM) CLASS I. Natural ecological changes and very limited management activity are allowed. Any contrast created within the characteristic landscape must not attract attention.

WILDERNESS. The definition contained in section 2(c) of the Wilderness Act of 1964 (78 Stat. 891).

WILDERNESS STUDY AREA (WSA). A roadless area or island that has been inventoried and found to have wilderness characteristics as described in section 603 of FLPMA and section 2(c) of the Wilderness Act of 1964 (78 Stat. 891).

WILDERNESS AREA. An area formally designated by Congress as part of the National Wilderness Preservation System.

WILDERNESS CHARACTERISTICS. The definition contained in section 2(c) of the Wilderness Act of 1964 (78 Stat. 891).

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